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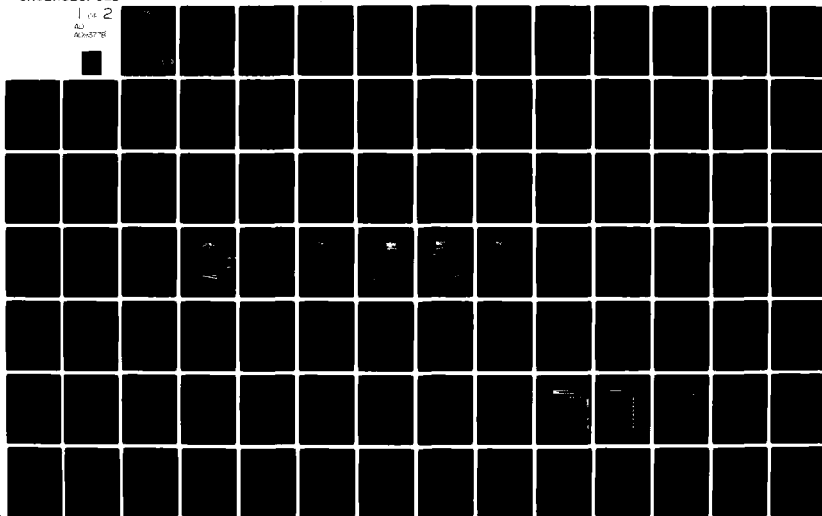
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THE ROLE OF THE AIR ASSAULT DIVISION
ON THE EUROPEAN BATTLEFIELD

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

CONRAD J. McHUGH, MAJ, USA
B.S., University of Tampa, 1975

Fort Leavenworth, Kansas
1980

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This study attempts to determine how the air assault division can best be employed on the modern mechanized battlefield. The investigation is focused on an analysis of Soviet ground tactics and organizations in comparison with US air assault tactics and organization. Soviet air assault concepts and doctrine are also examined to identify trends which may affect US air assault operations.

Investigation reveals that a distinct need exists to expand current air assault doctrine to address the complexities of combat on the mechanized battlefield. This study recommends that the scope of FM 71-101, Infantry, Airborne and Air Assault Division Operations, be adjusted to address current doctrinal voids and shortcomings.

The Role of the Air Assault Division on the European Battlefield

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6 June 1980

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A Master of Military Art and Science thesis presented to the faculty of the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

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ABSTRACT

THE ROLE OF THE AIR ASSAULT DIVISION ON THE EUROPEAN BATTLEFIELD BY MAJOR CONRAD J. McHUGH, USA

This study attempts to determine how the air assault division can best be employed on the modern mechanized battlefield. The investigation is focused on an analysis of Soviet ground tactics and organizations in comparison with US air assault tactics and organization. Soviet air assault concepts and doctrine are also examined to identify trends which may affect US air assault operations.

Investigation reveals that a distinct need exists to expand current air assault doctrine to address the complexities of combat on the mechanized battlefield. This study recommends that the scope of FM 71-101, Infantry, Airborne and Air Assault Division Operations, be adjusted to address current doctrinal voids and shortcomings.

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CHAPTER 1

THE AIR ASSAULT CONCEPT

Introduction

Air assault operations involve the maneuver of ground combat forces around the battlefield, using the firepower, mobility and flexibility of the helicopter for the purpose of engaging in ground combat to defeat the enemy.¹ The 101st Airborne Division (Air Assault) is the army's largest division and the only air assault division in the world.² The 101st shares with the 82nd Airborne Division the distinction of being part of the XVIII Airborne Corps or so-called "Contingency Corps". As part of the nation's strategic reserve, prepared for deployment worldwide, the air assault division has the dual advantages of being strategically mobile by USAF airlift aircraft and being tactically mobile upon arrival in any intended area of operations. The 101st is light, mobile and ideally organized and equipped for the possibility of worldwide employment.³

Since the end of US involvement in the Republic of Vietnam, the US Army has focused resources and developed doctrine to counter the potential Soviet/Warsaw Pact threat to our NATO allies in Western Europe. The threat to NATO forces would most likely take the form of large, highly mobile, armored forces seeking deep penetrations of NATO force defenses. For this reason, emphasis in recent years

has been on the development of sufficient mechanized infantry and armored forces to counter the capabilities of the potential enemy.

If war ever comes to Western Europe, it is reasonable to assume that the air assault division may be deployed to the area of conflict to take part in military operations alongside its mechanized and armored counterparts. The purpose of this study is to determine how the air assault division can best be employed on the mechanized European battlefield. The air assault division is a light infantry organization which achieves unparalleled mobility on the battlefield through the use of its organic helicopters. It is essential that the tactical doctrine for the employment of the division capitalizes on the organization's inherent mobility if it is to play a significant role on the European battlefield.

Methodology

In order to determine how the air assault division can best be employed on the modern mechanized battlefield, the following research methods and techniques will be utilized:

1. Soviet armor tactics and organizations will be compared with US air assault tactics and organization to identify strengths and weaknesses of current US organizations and tactical doctrine.

2. Detailed study of tactical concepts and doctrine for air assault operations used by other armed forces of the

world will be conducted to identify trends which may affect US air assault operations. Particular attention will be given to Soviet air assault concepts and doctrine.

Historical Perspective

The seeds of the air assault concept were probably sown during the airborne operations of World War II. The delivery of forces from the air to fight the enemy on the ground added a significant new dimension to the battlefield. The air assault forces of today are the direct descendants of their airborne infantry predecessors.⁴

The helicopter was first seriously used in support of combat operations during the Korean War. Initially, the use of the helicopter by the army was limited to medical evacuation, however, by the end of the conflict the army had organized and employed two helicopter transportation companies for the movement of combat troops. The nature of the Korean terrain pointed out the ability of the helicopter to provide unprecedented mobility in a hostile environment. At the conclusion of the war, the development of doctrine for the employment of heliborne infantry forces did not continue. The advantages the helicopter provided to the infantry were put aside in favor of a return to the development of airborne doctrine.⁵

There was a rather dramatic growth in army aviation following the Korean War. This expansion is generally attributed to the air forces concentration during the early 1950's on strategic bombing. The army's leadership was

concerned that essential tactical troop transport and close air support of ground forces by the air force would not be sufficient to meet army needs.⁶ It was during the mid 1950's that Major General James M. Gavin envisioned a "sky cavalry" organization which focused on the capabilities of the helicopter. The potential of the helicopter to perform the traditional missions associated with the cavalry provided the basis for the development of helicopter tactics during this time frame.⁷

During the mid to late 1950's the defense establishment placed great emphasis on the development of doctrine and organizations for use in a nuclear warfare environment. In 1956 Major General Hamilton H. Howze proposed that the helicopter might be the key to ground force operations on the nuclear battlefield. Howze felt that the mobility of the helicopter could provide the ground commander the ability to quickly mass or disperse his forces. Airmobile forces could also be used to quickly cross contaminated areas or to exploit the effects of friendly nuclear strikes.⁸ Although it was generally accepted that Howze's ideas had merit, the army was slow to pursue a dramatic increase in expenditures to expand expensive helicopter forces. In 1960 the army's objective was to provide each division enough internal helicopter lift capability to move at least one infantry company.⁹ The army's priorities, however, were destined to change soon.

In 1962 the military establishment had begun to shift from almost total fascination with the nuclear

battlefield to again realize the need and potential for conventional forces to project US interests. At the direction of the Secretary of Defense, Robert McNamara, the army convened a board to reexamine the role of army aviation. This board, which became known as the Howze Board (MG Hamilton Howze presided), presented two significant recommendations to the Secretary of Defense: 1) The formation of an air assault division and, 2) The formation of an air cavalry combat brigade.¹⁰ The proposed air assault division would be tailored from the standard ROAD division organization. In February 1963 the 11th Air Assault Division (Test) was activated at Fort Benning, Georgia. The 11th Air Assault was tasked to conduct an evaluation of the air assault concept for use in a mid-intensity combat environment.¹¹ The efforts of the 11th Air Assault to concentrate on the use of heliborne forces on the mid-intensity battlefield were soon overwhelmed by the realities of the US involvement in the Republic of Vietnam. The emphasis of the test and the emphasis on the development of air assault tactics was slowly changed to address the problems of conducting counterinsurgency type operations, as a result the mid-intensity potential for helicopters was put aside to be studied at some other time.¹²

It became quickly apparent during combat operations in Vietnam that the tactical employment of the helicopter would be one of the most important innovations of the war. The helicopter was used on a large scale for a variety of missions. Not only was the helicopter used for air assaults,

it was also found to be a valuable resource for tactical resupply, radio relay, command and control, medical evacuation, reconnaissance and fire support.¹³

The United States left the Vietnam experience behind and turned its attention again to the need to be prepared to conduct operations on a conventional battlefield. The 1973 Middle East War caused the military to realize that a lot had transpired while our attention was diverted to Southeast Asia. The battlefield had become much more lethal. As the army set about developing organizations that would be employed on this new battlefield, mechanized and armored forces were selected for their mobility, firepower and survivability.¹⁴

Role for the Air Assault Division in Europe?

The United States, at the conclusion of the Vietnam War, was the undisputed world leader in the employment of helicopter warfare. As emphasis shifted to preparation for conventional war in Europe the army again began to question the role of the helicopter in that environment. Can the helicopter survive in a mid to high intensity combat environment in Europe? I would point to the favorable findings of the Howze Board and 11th Air Assault tests of the early 1960's, the combat experiences of helicopter operations on Lam Son 719 and in the vicinity of An Loc, the tests conducted at Ford Hood by Project MASSTER,¹⁵ the results of the joint US - German - Canadian attack helicopter evaluation (known as the "Ansbach trials")¹⁶ and the results of the numerous

computer studies conducted in conjunction with the recent army purchase of the UH-60 and AH-64 and submit that the helicopter does have a place on the modern battlefield. Therefore, this study will not address the feasibility of employing helicopters on the modern battlefield, but will focus instead on how heliborne forces may be employed in conjunction with armored and mechanized forces on that battlefield.

Notes

- 1 Field Manual 90-4 (Draft), Air Assault Operations, Department of the Army, Washington, D.C., January 1977, p. 1-2.
- 2 Lieutenant Bruce S. Jasurda, "101st Airborne Division," Infantry, Volume 68, Number 3, May - June 1978, pp. 16 - 19.
- 3 John R. Galvin, Air Assault--The Development of Airmobile Warfare, Hawthorn Books, Inc., New York, 1968, p. 317.
- 4 Ibid., pp. xiii - xvi.
- 5 Ibid., pp. 254 - 264.
- 6 Major Robert A. Doughty, "The Evolution of US Army Tactical Doctrine, 1946-76," Leavenworth Papers, Combat Studies Institute, USCGSC, Ft. Leavenworth, KS, August 1979, p. 27.
- 7 Ibid., p. 27.
- 8 Ibid., pp. 27 - 28.
- 9 Ibid., p. 28.
- 10 Ibid., pp. 28 - 29.
- 11 Galvin, Air Assault, pp. 274 - 288.
- 12 Lieutenant General John J. Tolson, "Airmobility 1961 - 1971," Viet Nam Studies, Department of the Army, Washington, D.C., 1973, pp. 3 - 24.
- 13 Doughty, Leavenworth Papers, p. 31.
- 14 Ibid., pp. 40 - 46.
- 15 Lieutenant Colonel Retsae H. Miller, "Air Superiority at the Treetops," Military Review, Volume LIX, Number 3, March 1979, pp. 2 - 9.
- 16 General Hamilton H. Howze, "The Case for the Helicopter," Army, Volume 29, Number 3, March 1979, pp. 16 - 20.

CHAPTER 2

AIR ASSAULT DIVISION ORGANIZATION

General

The air assault division is organized around a modified light division base. Helicopter units have been integrated into the organizational structure in order to provide a tactical mobility capability which enhances the division's ability to conduct ground combat operations.¹

The most readily apparent structural difference between the air assault division and normal light infantry division organization is found in the size of each unit's organic aviation capabilities. A standard light infantry division has a single aviation battalion while the air assault division is organized with an integral aviation group.²

The aviation group has two assault helicopter battalions which are equipped with UH-1H and UH-60A aircraft; an assault support helicopter battalion equipped with the CH-47; an attack helicopter battalion which utilizes the AH-1S; and a general support aviation company.³

There are other less significant differences between the air assault division and other infantry divisions, but they all exist as a result of the need to make the maximum amount of the organization transportable by helicopter.⁴

The key difference of the air assault division is its capability to maneuver faster than other light divisions. In spite of this difference, it is still basically a light infantry division. The missions assigned to the division are not substantially different from those of other light divisions. The division is best utilized when it is employed in ways which best capitalize on the mobility provided by its organic helicopters.⁵

On the following pages I have provided a more detailed look at the organizational structure of the combat, combat support and combat service support elements of the air assault division. The organization of the division, centered on light infantry transported by helicopter, has a significant impact on the possible ways that the division can be employed on the European battlefield.

DETAILED ORGANIZATIONAL INFORMATION

AIR ASSAULT DIVISION

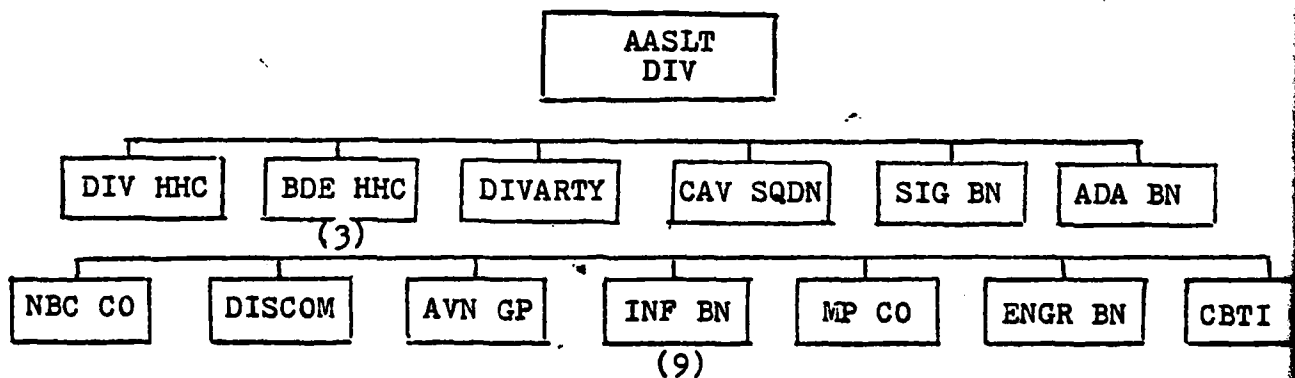
AIR ASSAULT DIVISION⁶

TOE 67H

Mission: To destroy enemy forces; to perform various roles in all levels of conflict, to include the full range of offensive and defensive operations capitalizing on its inherent mobility and unique air assault tactics; and to provide a highly mobile reconnaissance, security, or reserve force for larger units.

<u>Strength:</u>	Officers	1,266
	Warrant Officers	728
	Enlisted	16,082
	Total	18,076

Type Organization:



AIR ASSAULT DIVISION ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 80-2.

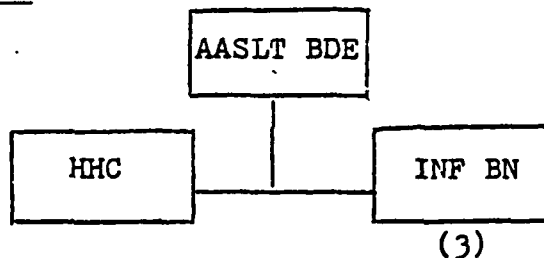
HHC, AASLT DIV BDE⁷

TOE 6-47H

Mission: To command and control attached combat and combat support elements in both training and combat operations.

<u>Strength:</u>	Officers	24
	Warrant Officers	18
	Enlisted	117
	Total	159

Type Organization:



HHC, AIR ASSAULT BRIGADE ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-81.

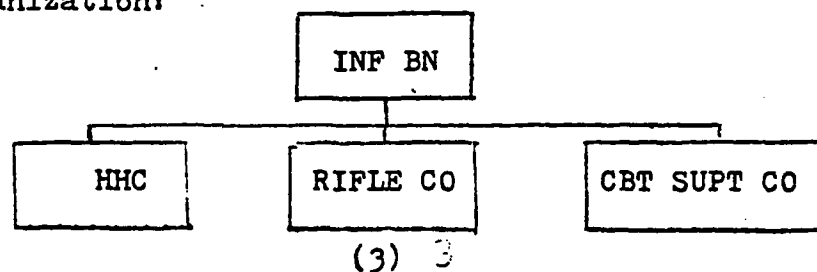
INFANTRY BATTALION⁹

TOE 7-55H

Mission: To close with the enemy by means of fire and maneuver in order to destroy or capture him or to repel his assault by fire, close combat, and counterattack.

<u>Strength:</u>	Officers	35
	Warrant Officers	1
	Enlisted	755
	Total	791

Type Organization:¹⁰



INFANTRY BATTALION ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-111.

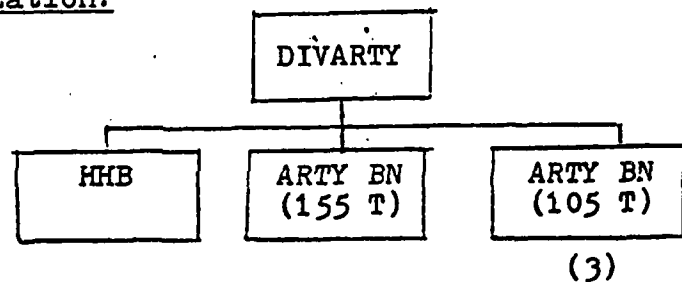
AASLT DIV ARTY¹¹

TOE 6-700H

Mission: To provide DS and GS field artillery fires for the air assault division.

<u>Strength:</u>	Officers	230
	Warrant Officers	83
	Enlisted	2,163
	Total	2,476

Type Organization:



AIR ASSAULT DIVARTY ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-82.

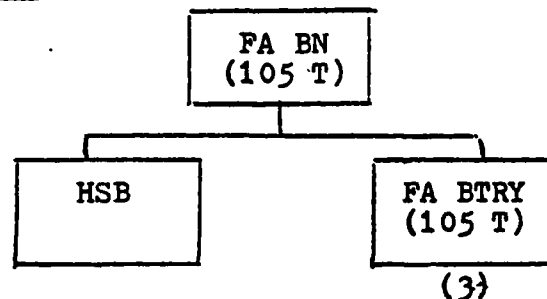
FA BN, 105 TOWED¹²

TOE 6-705H

Mission: To provide field artillery fires in direct support of a maneuver brigade; to reinforce the fires of other field artillery units.

Strength:	Officers	39
	Warrant Officers	2
	Enlisted	360
	Total	401

Type Organization:¹³



FA BN, 105 TOWED, ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-83.

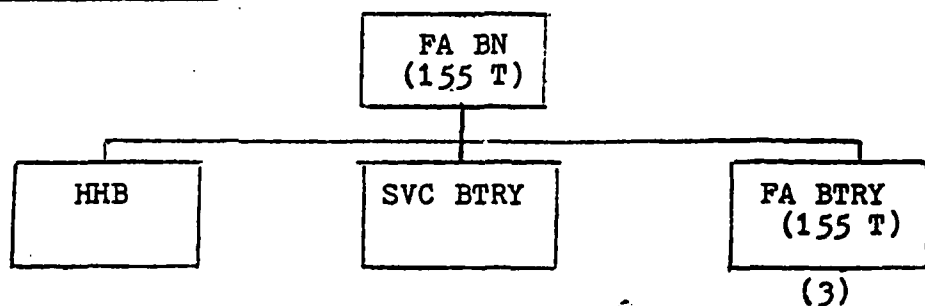
FA BN, 155-TOWED¹⁴

TOE 6-715H

Mission: To provide field artillery fires, to include nuclear, in general support of an air assault division. To reinforce the fires of other field artillery units.

<u>Strength:</u>	Officer	25
	Warrant Officer	2
	Enlisted	500
	Total	527

Type Organization:



FA BN, 155 TOWED, ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-84.

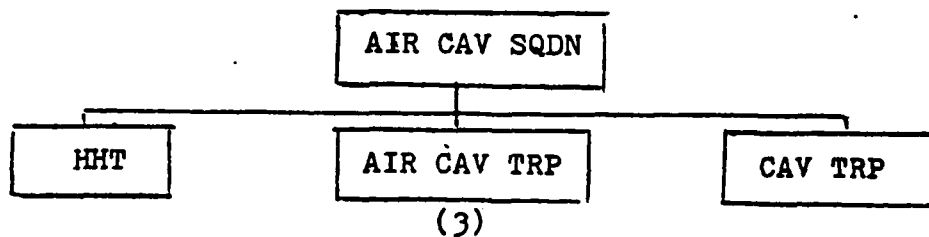
AIR CAV SQDN¹⁵

TOE 17-95H

Mission: To perform reconnaissance, security, and economy of force operations.

<u>Strength:</u>	Officer	69
	Warrant Officer	104
	Enlisted	731
	Total	904

Type Organization:¹⁶



AIR CAV SQDN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-109.

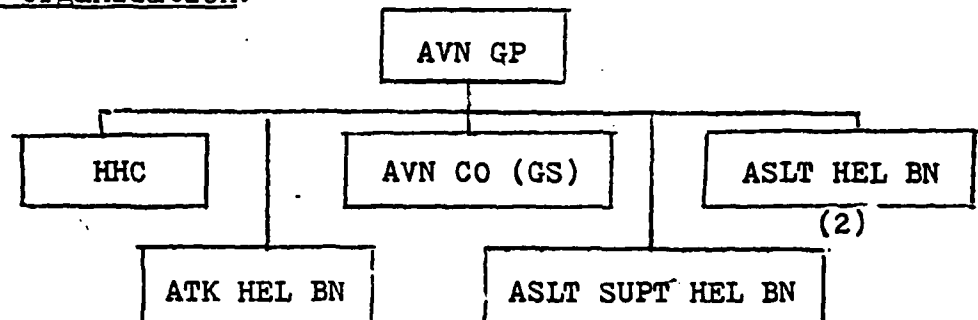
AVIATION GROUP⁷

TOE 7-200H

Mission: To provide aviation support to the air assault division and aviation special staff personnel to division HQ.

<u>Strength:</u>	Officer	209
	Warrant Officer	401
	Enlisted	1,817
	Total	2,427

Type Organization:



AVIATION GROUP ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-87.

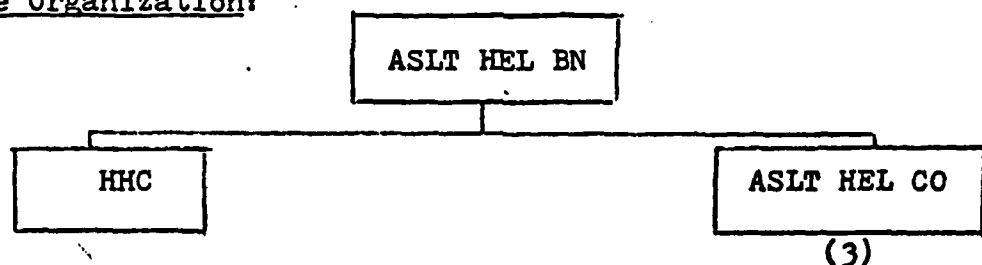
ASSAULT HELICOPTER BN¹⁸

TOE 7-255H

Mission: To provide tactical mobility for combat troops, supplies, and equipment of the division during the conduct of combat and air assault operations.

<u>Strength:</u>	Officer	56
	Warrant Officer	138
	Enlisted	480
	Total	674

Type Organization:



ASSAULT HELICOPTER BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, 2-89.

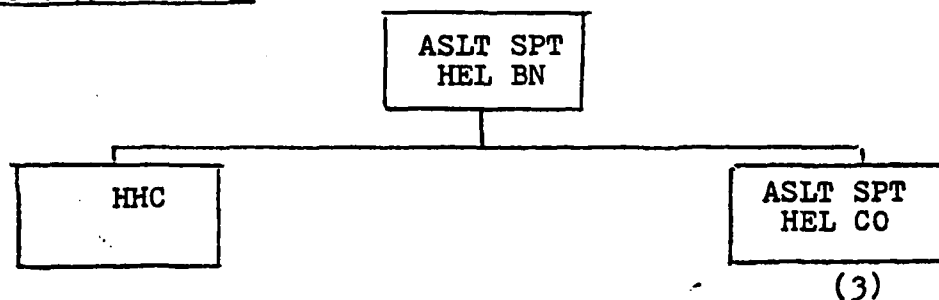
ASSAULT SUPPORT HELICOPTER BN¹⁹

TOE 1-165H

Mission: To provide tactical air movement of combat troops and material in air assault operations within the combat zone.

<u>Strength:</u>	Officer	44
	Warrant Officer	88
	Enlisted	507
	Total	639

Type Organization:²⁰



ASSAULT SUPPORT HELICOPTER BN ORGANIZATION

Source: FM 101-10-1, 1 July, 1976, p. 2-90.

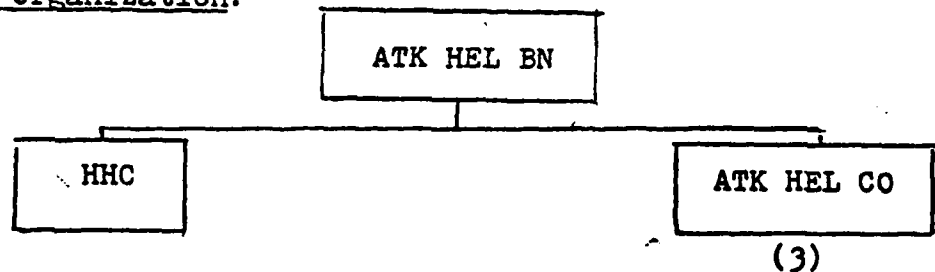
ATTACK HELICOPTER BN²¹

TOE 17-385H

Mission: To destroy enemy armored and mechanized forces by aerial combat power using fire and maneuver as an integral part of the combined arms team during offensive, defensive, and retrograde operations.

<u>Strength:</u>	Officers	63
	Warrant Officers	144
	Enlisted	639
	Total	846

Type Organization:²²



ATTACK HELICOPTER BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-85.

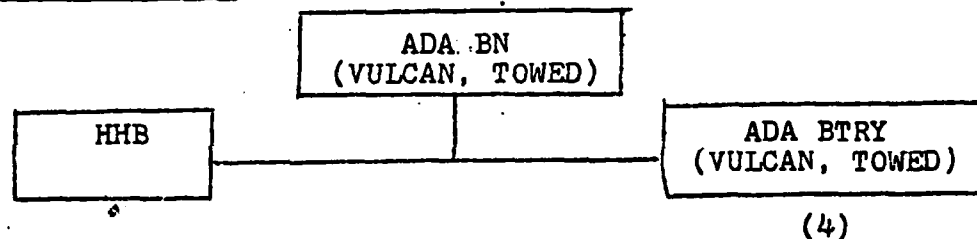
ADA BN, VULCAN TOWED²³

TOE 44-435H

Mission: To provide air defense for the air assault division as required against attack by low altitude hostile aircraft.

<u>Strength:</u>	Officers	35
	Warrant Officers	7
	Enlisted	443
	Total	485

Type Organization:²⁴



ADA BN, VULCAN TOWED, ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-85.

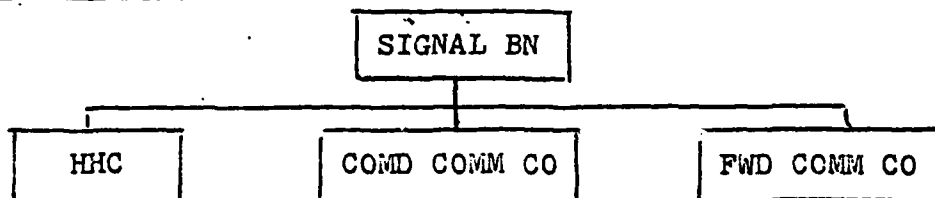
SIGNAL BN²⁵

TOE 11-205H

Mission: To provide signal communications systems and facilities for an air assault division.

<u>Strength:</u>	Officers	19
	Warrant Officers	3
	Enlisted	440
	Total	462

Type Organization:²⁶



SIGNAL BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-95.

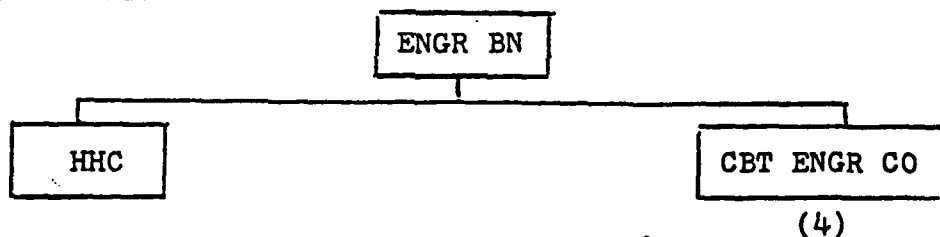
ENGINEER BN²⁷

TOE 5-215H

Mission: To increase the combat effectiveness of the air assault division by performing General and special engineer tasks and to undertake and carry out infantry combat missions, when required.

<u>Strength:</u>	Officers	40
	Warrant Officers	2
	Enlisted	678
	Total	720

Type Organization:²⁸



ENGINEER BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-93.

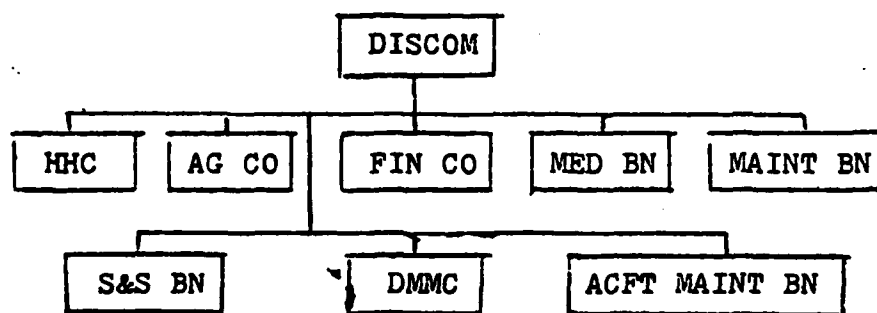
DISCOM²⁹

TOE 29-41H

Mission: To provide division level combat service support to all assigned or attached elements of the division, except for military police service, communications, construction, and those administrative services provided by special staff sections in the administration company.

<u>Strength:</u>	Officers	200
	Warrant Officers	63
	Enlisted	2,396
	Total	2,659

Type Organization:



DISCOM ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-99.

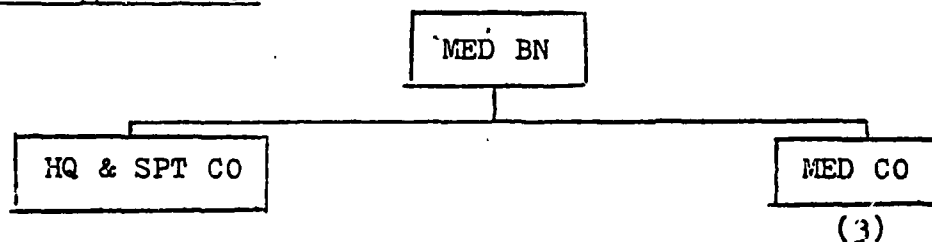
MEDICAL BN³⁰

TOE 8-25H

Mission: To provide division-level and unit-level medical support, as required, to divisional units.

<u>Strength:</u>	Officers	66
	Warrant Officers	17
	Enlisted	314
	Total	390

Type Organization:³¹



MEDICAL BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-102.

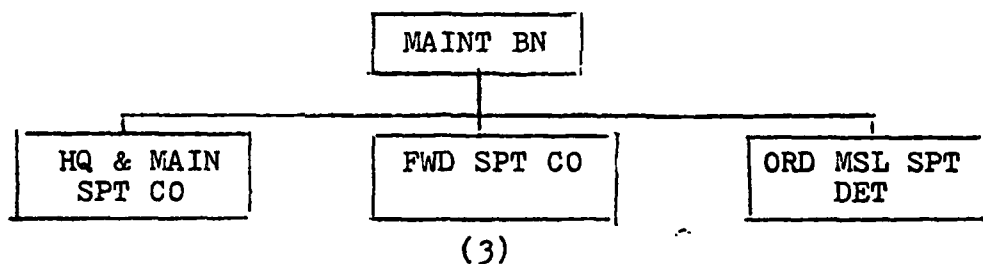
MAINTENANCE BN³²

TOE 29-85H

Mission: To provide direct support supply and maintenance for all units of the division for equipment, except for aircraft; aircraft armament and avionic equipment; and medical, cryptographic, and quartermaster air items.

<u>Strength:</u>	Officers	29
	Warrant Officers	10
	Enlisted	573
	Total	612

Type Organization:³³



MAINTENANCE BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-106.

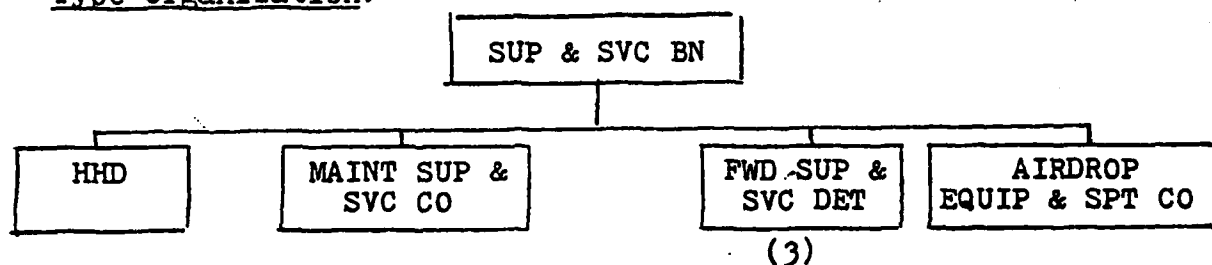
SUPPLY AND SERVICES BN³⁴

TOE 29-45H

Mission: To provide all classes and items of supply required by division elements except Class VIII and IX supplies, supplies peculiar to COMSEC equipment, rail mission type equipment, aircraft, and Class IV approved operational project items.

<u>Strength:</u>	Officers	27
	Warrant Officers	6
	Enlisted	580
	Total	613

Type Organization:³⁵



SUPPLY AND SERVICES BN ORGANIZATION

Source: FM 101-10-1, 1 July 1976, p. 2-69.

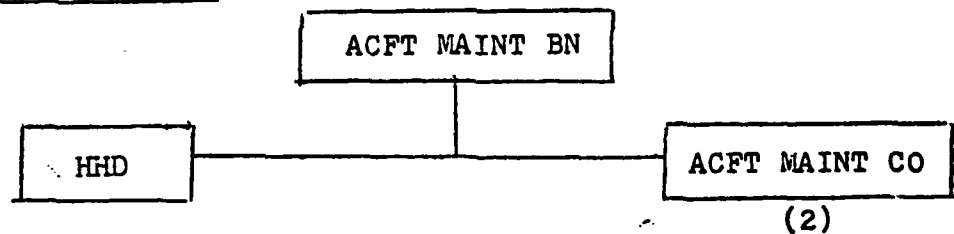
ACFT MAINT BN (AVIM)

TOE 55-405

Mission: To provide aircraft direct support maintenance to include avionic and armament maintenance and repair parts support for aircraft organic to the air assault division.

<u>Strength:</u>	Officers	16
	Warrant Officers	16
	Enlisted	528
	Total	560

Type Organization: ³⁷



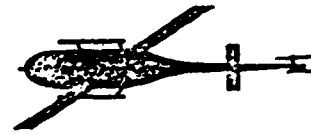
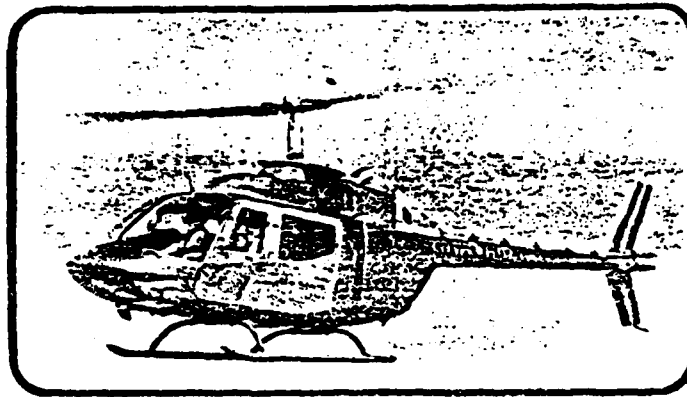
AIRCRAFT MAINT BN (AVIM) ORGANIZATION

Source: Air Assault Structure Handbook, 3 February 1977, p.95.

SELECTED EQUIPMENT

AIR ASSAULT DIVISION

KIOWA (OH-58) - Light Observation, Recon ³⁸



ARMAMENT: Varied

SPEED: 222 km/hr

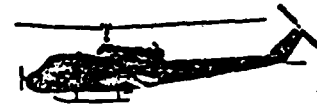
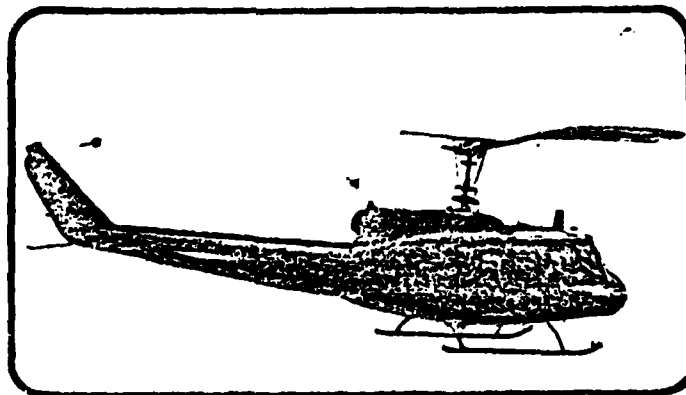
RANGE: 416 km

USERS: Australia, Austria, Brazil, Canada, Chile, Greece, Iran, Italy, Sweden, Turkey, United States



HELICOPTER

IROQUOIS (UH-1D/H) - General Purpose ³⁸



ARMAMENT: Varied

SPEED: 222 km/hr

RANGE: 340 km

USERS: Argentina, Australia, Brazil, Canada, Greece, Iran, Israel, Italy, People's Republic of China, Saudi Arabia, South Korea, Spain, Thailand, Turkey, United States, Zambia



HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 11-13.

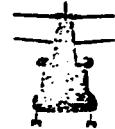
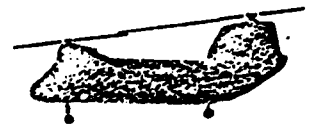
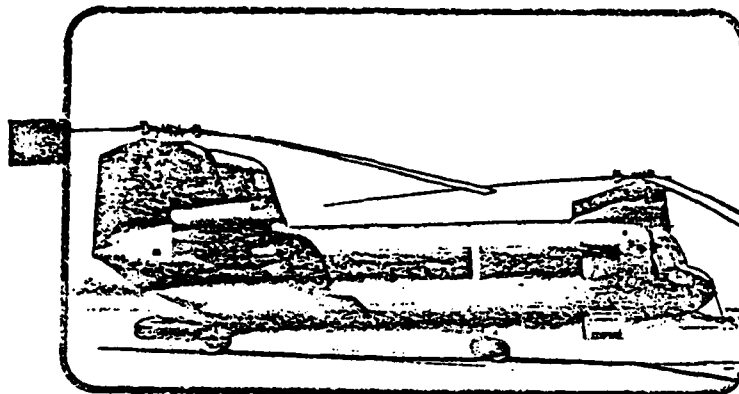


UH-60³⁹

UH-60 HELICOPTER

Source: Army Aviation, March 31, 1978, p. 20.

CHINOOK (CH-47) - Medium Transport ⁴⁰



ARMAMENT: Varied

SPEED: 322 km/hr

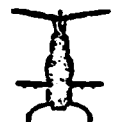
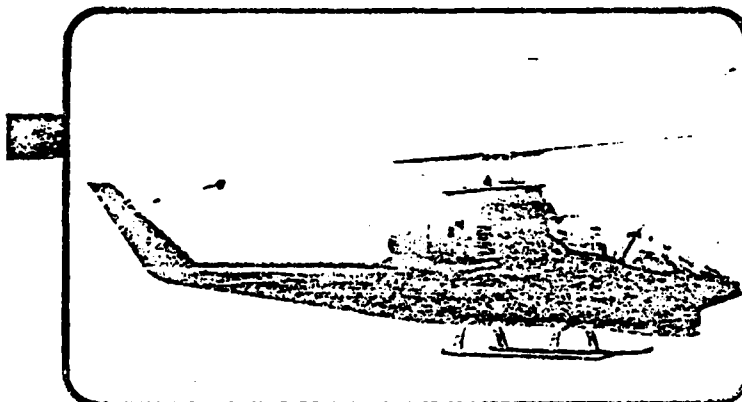
RANGE: 531 km

USERS: Australia, Iran, Italy, Spain, United States



HELICOPTER

COBRA (AH-1G/AH-1Q*) - Attack ⁴⁰



ARMAMENT: Multi-weapons systems

SPEED: 352 km/hr

RANGE: 410 km

USERS: Iran (I Model), Spain, United States

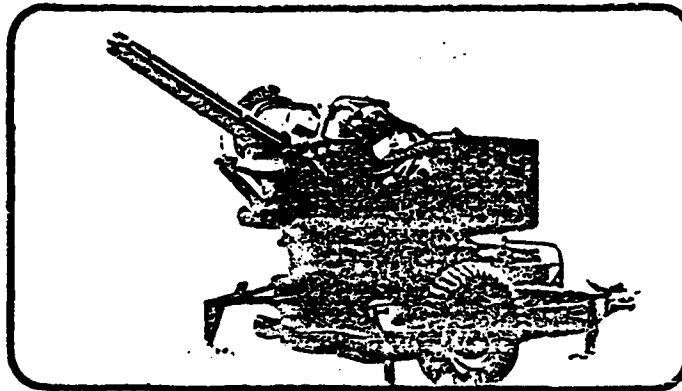
*The AH-1Q (Cobra TOW) mounts the TOW antitank missile. Configuration of AH-1Q and AH-1G is similar varying in the nose section somewhat.

HELICOPTER



Source: Training Circular 1-88, 29 March 1977, pp. 12 - 14.

Vulcan 20mm Cannon ⁴¹



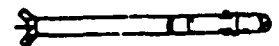
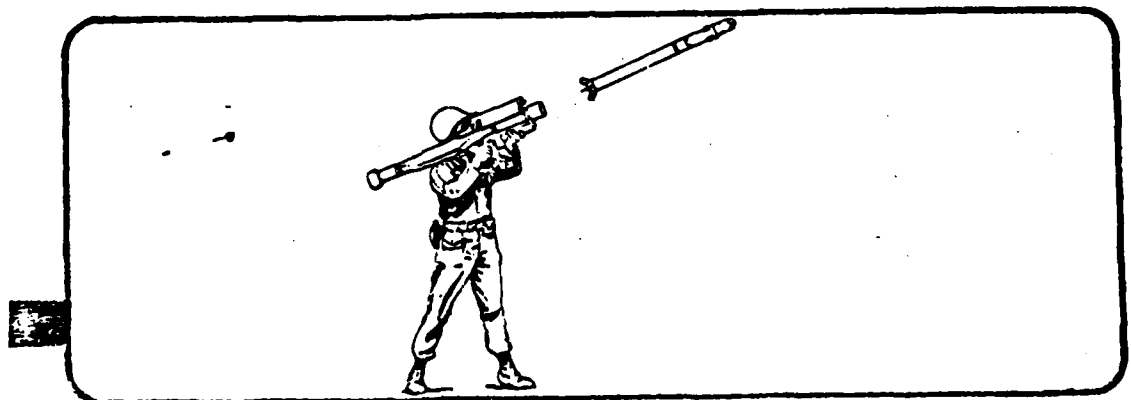
ARMAMENT: 1 x 20mm cannon (6 barrels)

MAIN GUN RANGE: AD - 1,200 meters
Direct - 3,000 meters

USERS: United States

AA & SAM

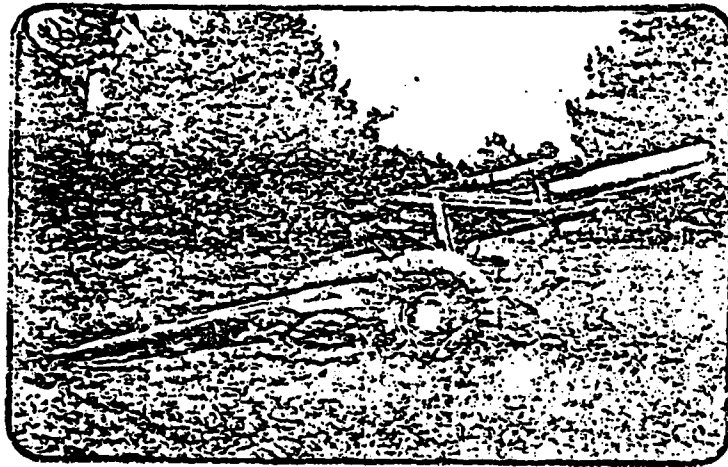
Redeye - Portable Antiaircraft Missile*⁴¹




Source: Training Circular 1-88, 29 March 1977, pp. 75-78.

AA & SAM

M114A1 155mm Howitzer, Towed ⁴²



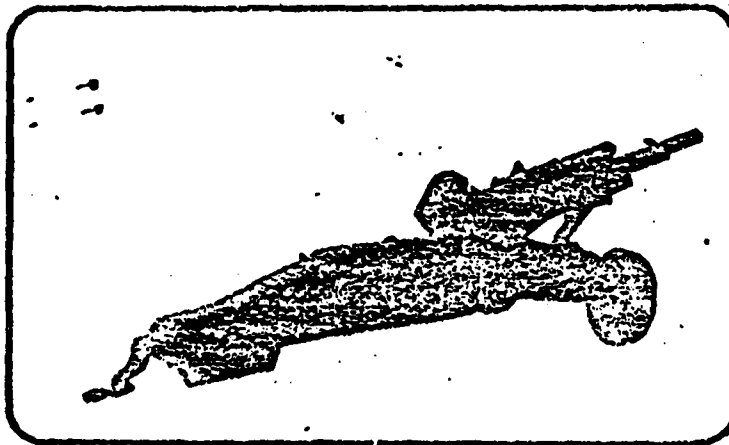
 **ARMAMENT:** 1 x 155mm howitzer

RANGE: 14,600 meters

USERS: NATO, United States

ARTILLERY

M102 105mm Light Howitzer ⁴²



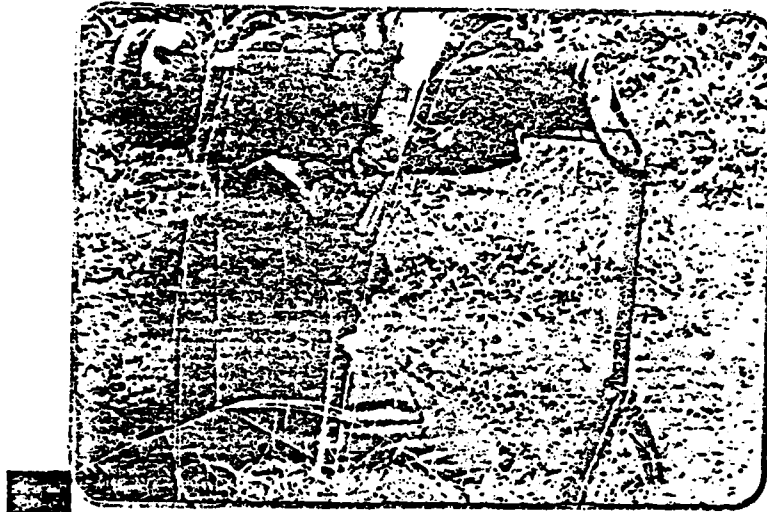
ARMAMENT: 1 x 105mm howitzer

RANGE: 11,500 meters

USERS: United States

Source: Training Circular 1-88, 29 March 1977, pp. 163-164.

M-47 (MAW) Dragon Antitank Weapon System ⁴³

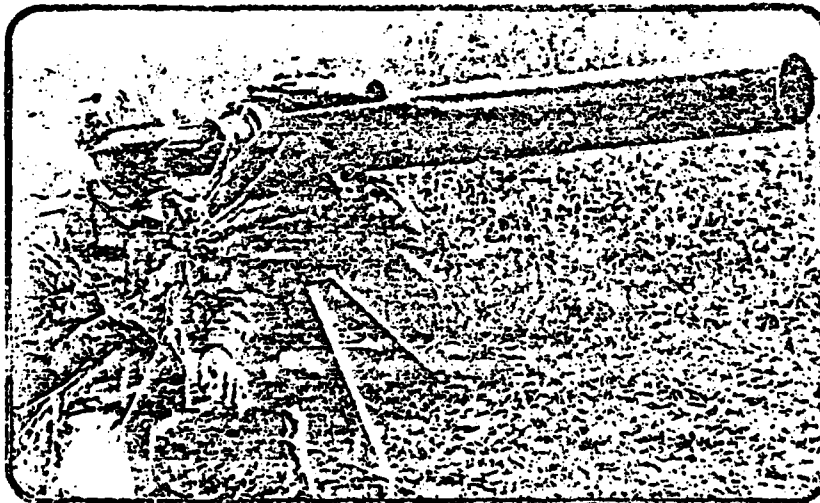


ARMAMENT: 1 x Dragon missile

RANGE: 1,000 meters

USERS: United States
ARTILLERY

TOW (HAW) Missile System ⁴³



ARMAMENT: Fires (TOW) missile

RANGE: 3,000 meters

USERS: NATO, United States, West Germany
Source: Training Circular T-88, 29 March 1977, pp. 168-169.

ARTILLERY

Notes

- 1 Field Manual 90-4 (Draft), Air Assault Operations, Department of the Army, Washington, D.C., January 1977, p. 1-7.
- 2 Ibid., p. 1-7.
- 3 Ibid., pp. 1-7, 1-8.
- 4 Ibid., p. 1-8.
- 5 Ibid., p. 1-8.
- 6 Field Manual 101-10-1, Staff Officers Field Manual--Organizational, Technical and Logistical Data, Department of the Army, Washington, D.C., 1 July 1976, p. 2-80.2.
- 7 Ibid., p. 2-81.
- 8 Air Assault Structure Handbook, Department of the Army, 101st Airborne Division(AASLT), Fort Campbell, KY, Revision IV, 3 February 1977, p. 3.
- 9 Field Manual 101-10-1, p. 2-111.
- 10 Air Assault Structure Handbook, p. 67.
- 11 Field Manual 101-10-1, p. 2-82.
- 12 Ibid., p. 2-83.
- 13 Air Assault Structure Handbook, p. 33.
- 14 Field Manual 101-10-1, p. 2-84.
- 15 Ibid., p. 2-109.
- 16 Air Assault Structure Handbook, p. 5.
- 17 Field Manual 101-10-1, p. 2-87.
- 18 Ibid., p. 2-89.
- 19 Ibid., p. 2-90.
- 20 Air Assault Structure Handbook, p. 53.
- 21 Field Manual 101-10-1, p. 2-85.
- 22 Air Assault Structure Handbook, p. 99.
- 23 Field Manual 101-10-1, p. 2-85.

Notes (Cont.)

- 24 Air Assault Structure Handbook, p. 17.
- 25 Field Manual 101-10-1, p. 2-95.
- 26 Air Assault Structure Handbook, p. 17.
- 27 Field Manual 101-10-1, p. 2-93.
- 28 Air Assault Structure Handbook, p. 59.
- 29 Field Manual 101-10-1, p. 2-99.
- 30 Ibid., p. 2-102.
- 31 Air Assault Structure Handbook, p. 89.
- 32 Field Manual 101-10-1, p. 2-106.
- 33 Air Assault Structure Handbook, p. 87.
- 34 Field Manual 101-10-1, p. 2-69.
- 35 Air Assault Structure Handbook, p. 93.
- 36 Field Manual 101-10-1, p. 2-108.
- 37 Air Assault Structure Handbook, p. 95.
- 38 Training Circular 1-88, Aviators Recognition Manual,
Department of the Army, Washington, D.C., 29 March 1977,
pp. 11 - 13.
- 39 Army Aviation, Volume 27, Number 3, March 31, 1978, p. 20.
- 40 Training Circular 1-88, pp. 12 - 14.
- 41 Ibid., pp. 75 - 78.
- 42 Ibid., pp. 163 - 164.
- 43 Ibid., pp. 168 - 189.

CHAPTER 3

CAPABILITIES AND LIMITATIONS OF THE AIR ASSAULT DIVISION

Introduction

The modern ground forces which would oppose one another on the European battlefield would be made up of highly mobile mechanized infantry and armored units. The inherent firepower and mobility of mechanized and armored forces allows their employment to turn exposed flanks, to penetrate deep into enemy rear areas where support facilities can be destroyed, to rapidly reinforce critical areas on the battlefield and to conduct reconnaissance activities to locate enemy weaknesses. Once reconnaissance elements have located enemy weak areas, these highly mobile ground forces can be concentrated to apply superior combat power at the critical point on the battlefield.¹

The air assault division possesses a tactical mobility far exceeding that of its mechanized and armored counterparts. Although the light infantry of the air assault division does not possess the heavy firepower of a mechanized or armored force, it has the capability to maneuver about the battlefield approximately eight times faster than the most highly mobile ground forces.² In view of the mobility differential available with the employment of the air assault division, it would seem to be a valuable asset which could

complement the capabilities of the friendly mechanized and armored units on the European battlefield. I don't, however, propose to represent the air assault division as a panacea in a mid to high intensity combat environment in Europe.

The air assault division conducts mobile combat operations by transporting its combat and combat support elements into battle by helicopter. Once deployed on the ground, air assault infantry units fight like those combat elements of a normal light infantry division. A rapid tempo of operations is maintained by the capability to rapidly redeploy combat power within the area of operations.³

The capabilities and limitations of the air assault division with regard to the modern battlefield reflect a combination of the strengths and weaknesses of light infantry vs. heavy mechanized and armored forces and the capabilities and limitations revolving around the employment of heliborne forces in a sophisticated air defense threat environment. To evaluate any combat organization it is necessary to identify the unit's capabilities and limitations; to compare these factors with the anticipated threat environment, while weighing the limitations of the organization against the degree of risk that is acceptable to the commander employing that force. Current US Army doctrine for the employment of the air assault division is provided in FM 71-101 (Draft). In order to place later discussion of the tactical employment of the division in proper perspective and to facilitate comparison of US and Soviet air assault concepts, I have expanded upon the doctrinally provided capabilities and

and limitations of the air assault division to include more detail and a greater variety of considerations.

Capabilities

1. Bypass of Obstacles:

The heliborne infantry and attack helicopters of the air assault division can bypass natural and manmade barriers, obstacles and NBC contaminated areas, to attack an enemy force from virtually any direction.⁴ Objectives in seemingly inaccessible areas can be struck as well as objectives deep in enemy rear areas. This capability aids in achieving surprise, causing the enemy to react prematurely, or causing the enemy to disclose his positions to other attacking forces. The air assault division can, therefore, cause the enemy to fight in more than one direction at a time. An enemy commander facing an air assault division, or who fears that an air assault force may be employed in his area of operations, may be inclined to reduce his combat forces in forward defensive positions or in forward attacking elements in order to protect vital rear facilities.⁵

2. Rapid Concentration/Dispersion:

The mobility of the air assault division allows it to concentrate combat power, disperse forces quickly, or redeploy within the corps or army area to extend its area of influence, develop the tactical situation, or decrease its vulnerability to attack. This ability to rapidly concentrate or disperse combat elements can be a significant factor in a

theater of operations that has progressed to tactical nuclear or chemical warfare.⁶

3. Rapid Tempo of Operations:

The air assault division can conduct combat operations simultaneously in more than one direction, or even in more than one area of operations at a given time. This capability allows the division to maintain a rapid tempo of combat operations within the division's area of operations. As part of a larger force, the mobility of the division can be exploited to assist the corps commander in maintaining a rapid tempo of operations throughout the corps area.⁷

4. Surprise and Deception:

There is a capability of the division which should not be underestimated. The division is capable of doing the unexpected. The division can conduct air assault operations under marginal weather conditions and at night. Surprise and deception can be achieved by making maximum use of these conditions for our own purposes.⁸ The "best" weather for the majority of air assault operations is most likely that weather which is barely satisfactory for helicopter operations, but which is not good enough to allow the operation or employment of enemy tactical close air support aircraft. Deception operations can be extremely successful in low visibility conditions. A false insertion of troops into the enemy rear area at night may cause as much confusion and disruption as an actual attack in those areas.

5. Concentration of Firepower:

The division can move organic artillery and the attack helicopter battalion quickly by air in order to concentrate fires in critical areas of the battlefield.⁹ The division has the capability to redeploy entire artillery battalions quickly if required, or to move individual artillery batteries on "artillery raids" to influence the battle in forward areas. The most highly responsive fires available to the division are provided by the attack helicopter battalion. This capability is best reflected in the incredible fact that the attack helicopter battalion can deliver over 500 TOW missiles in one launch without rearming.¹⁰

6. Independent Operations:

The division is capable of conducting independent airhead operations for approximately two days without external support.¹¹ The capability to conduct independent operations can prove to be quite valuable under some tactical situations. If, however, the air assault force is employed in terrain that does not hamper the maneuver of enemy mechanized forces, early link-up with friendly mech/armor elements will be necessary.

7. Provide Flexibility:

The assignment of an air assault division to a heavy corps provides flexibility to the corps commander for the conduct of the battle. The ability of the division to influence large areas of the battlefield can be exploited by using the division in an economy of force role, thus freeing mech/armor units for concentrated employment at the critical

place on the battlefield. The commander also has the option of maintaining a highly mobile air assault reserve, again with the objective of freeing heavy forces for use in decisive areas.¹²

8. Rapid Reaction:

The division has the capability of reacting rapidly to tactical opportunities which present themselves on the battlefield. Air assault infantry elements can be placed at the decisive point on the battlefield, in the most favorable tactical position, by helicopter. Fresh troops, therefore, can enter the battle in critical places at critical times, without requiring long, tiring and costly approach marches.¹³

9. Security/Surveillance:

The division can conduct surveillance operations over a wide area and can bring enemy elements quickly under fire.¹⁴ An air assault division being employed in a surveillance/security role on the mech/armor battlefield can react quickly to enemy activity and can delay enemy elements for sufficient time for heavy maneuver forces to be deployed to counter the enemy force.

10. Freedom from Ground LOC:

Finally, the division is capable of conducting operations independent of a ground line of communication.¹⁵ This could be particularly valuable during short duration missions over exceptionally rugged terrain or forward of significant obstacles to ground transportation.

Limitations

1. Severe Weather:

While the weather can be used to our advantage, in some cases it can also limit the operations of the air assault division. Severe weather conditions which would preclude the use of helicopters, but which would not be severe enough to affect enemy employment of conventional armored and mechanized forces presents the most critical situation. We could expect that an enemy commander opposing an air assault division would closely monitor the weather in his area of operations in order to take advantage of this weakness. It is imperative, therefore, that the air assault commander be continually aware of current weather conditions and weather forecasts affecting his area of operations. When it appears that a critical situation, as depicted above is developing, additional resources will be required by the air assault division in order for it to accomplish its mission. Depending on the tactical situation, the air assault division may require additional motor transport, indirect field artillery fire support, or mech/armor unit augmentation. In any case, the weather can be the division's ally or enemy. The outcome of air assault operations may very well hinge on those command decisions which are based upon the forecast weather conditions over the battlefield. Additional discussion of the impact of weather and visibility on air assault operations will be presented later in chapter 4.¹⁶

2. Limited Lift Capability:

Air assault operations in Europe may be limited by the type and quantity of heavy equipment and supporting weapons which can be airlifted into the objective area by helicopter. The light infantry elements of the air assault division will require, as a minimum, field artillery, engineer, air defense and anti-armor support on the European battlefield. Plans must insure that essential support is either made available by other units near the intended area of operations or is taken with the air assault force using limited helicopter lift assets.¹⁷

3. Use of AIRLOC:

Some operations may require the air assault division to rely entirely upon air lines of communication (AIRLOC) for needed support. Although the air assault division does possess this capability and the assault force can be supported by helicopter and USAF aircraft, the limitations inherent in total dependence upon AIRLOC will limit the ability of the air assault force to conduct sustained operations and will make early link-up with friendly mech/armor forces essential.¹⁸

4. Vulnerability:

The air assault division requires near-secure landing zones for the delivery of units into the objective area.¹⁹ During the initial insertion of combat elements into the objective area, lift aircraft are extremely vulnerable to enemy ground fire. The air assault force commander requires good intelligence information which will allow the

selection of operationally feasible landing zones. Suppressive fires will be required along initial flight routes and preparatory fires may be required in the initial landing zones.

The division is vulnerable to enemy tactical aircraft, air defense, and electronic warfare systems.²⁰ Enemy tactical aircraft can be extremely effective against the lightly protected, thin skinned assets of the division. The light infantry of the division is vulnerable to air attack because it lacks the protection of armored vehicles which is common to other forces on the mech/armor battlefield. The division's helicopters normally stage from areas which are located approximately 10 to 15 kilometers behind the FEBA. This distance is important in that it places the highly vulnerable, thin skinned helicopter force out of the range of the enemy's medium range artillery fires. However, these helicopter staging areas as well as refueling areas are extremely vulnerable to enemy air attack. The division's air defense artillery battalion is equipped only with the Vulcan air defense system. This air defense capability should be augmented with Chapparel and Hawk systems when feasible. The large number of aircraft organic to the division and the division's almost total reliance upon those aircraft for combat as well as combat support capabilities requires that the division pay considerable attention to the suppression of enemy air defensive systems. Enemy air defense systems are addressed in detail in Chapter 5. In order for the division to maintain the capability to react

quickly over great distances to the ever changing battle-field situation, it relies heavily upon radio communications for command and control of combat operations. The requirement to rely upon radio communications over great distances makes these communications nets exceptionally vulnerable to enemy electronic warfare operations. The division must continually strive to maintain necessary communication links through the application of a sound ECCM program.

5. Limited Ground Mobility:

The air assault division has a very limited ground transportation capability.²¹ The S & T battalion of an infantry division contains a transportation company which provides necessary support to the infantry brigades. Since the air assault division relies upon the helicopter for its mobility, its DISCOM is organized differently. The air assault division has an S & S battalion which contains only a transportation platoon. In addition to the lack of vehicles in the DISCOM, combat and combat support elements of the division have only a limited number of vehicles in order that the division retain the capability to remain light and deployable by helicopter. As a result of the paucity of ground vehicles within the division, infantry elements lack ground mobility in operational areas once they have departed their helicopters; artillery batteries lack ground prime movers to tow or displace artillery pieces; and resupply of all units must rely heavily upon helicopter logistic support.

6. Limited Firepower/Protection:

Finally, the combat elements of the air assault division do not possess the firepower nor the protection of their mech/armor counterparts on the modern battlefield.²² The division, therefore, lacks the capability to close with enemy mech/armor elements in terrain which favors mechanized operations. The division can most effectively be used in terrain which is restrictive to modern mechanized forces: large urban areas, dense forests, swamps and mountainous regions.

Summary

The air assault division possesses combat and maneuver capabilities which make it a valuable asset for use on the modern battlefield. It is imperative, however, that the limitations of the division be taken into consideration when planning for employment of the division in conjunction with the elements of a heavy corps. In Chapter 7 I will attempt to identify how the capabilities of the division can be exploited in combat operations on the modern battlefield, while simultaneously identifying those actions necessary or advisable to reduce the effect of the division's limitations.

Notes

- 1 Field Manual 17-50, Attack Helicopter Operations, Department of the Army, Washington, D.C., 1 July 1977, p. 1-3.
- 2 Field Manual 90-4 (Draft), Air Assault Operations, Department of the Army, Washington, D.C., January 1977, p. 1-4.
- 3 Field Manual 71-101 (Draft), Infantry, Airborne and Air Assault Division Operations, Department of the Army, Washington, D.C., 5 December 1979, p. 8-3.
- 4 Ibid., p. 8-2.
- 5 Field Manual 90-4 (Draft), p. 1-5.
- 6 Field Manual 71-101 (Draft), p. 8-2.
- 7 Ibid., p. 8-2.
- 8 Ibid., p. 8-2.
- 9 Ibid., p. 8-2.
- 10 Field Manual 90-4 (Draft), p. 1-8.
- 11 Field Manual 71-101 (Draft), p. 8-2.
- 12 Field Manual 90-4 (Draft), p. 1-5.
- 13 Ibid., p. 1-5.
- 14 Ibid., p. 1-5.
- 15 Field Manual 57-35, Airmobile Operations, Department of the Army, Washington, D.C., 25 March 1971, p. 4.
- 16 Field Manual 71-101 (Draft), p. 8-3.
- 17 Field Manual 90-4 (Draft), p. 1-6.
- 18 Ibid., p. 1-6.
- 19 Field Manual 71-101 (Draft), p. 8-3.
- 20 Ibid., p. 8-3.
- 21 Ibid., p. 8-3.
- 22 Ibid., p. 8-7.

CHAPTER 4

THE EUROPEAN ENVIRONMENT

Introduction

The operational environment in central Europe can have a significant impact on the combat operations of the air assault division. It's true that the elements of the environment will not be the main influence on every operation. Each operation is affected by the organization's mission, the level of conflict, the nature of the enemy forces, the civilian population, friendly forces available, and the list could go on and on. The capabilities, limitations and possible vulnerabilities of the air assault division are closely linked, however, to the influences of the operational environment.¹

Weather

The weather can be the friend or foe of the air assault division. General military aspects of weather include visibility, clouds, precipitation, temperature and wind.² I will discuss selected aspects of weather as it applies to air assault operations in central Europe.

The climate in West Germany is basically cold and damp and is characterized by low overcast conditions and rain.³ Chart 4-1 depicts the mean temperatures for the four seasons in Germany. Chart 4-2 shows the mean rainfall that can be expected. Chart 4-3 depicts the frequency of days of fog and Chart 4-4 shows the average duration of that fog in

hours. Chart 4-5 provides average ceiling conditions throughout the year.

Extremes in temperature can adversely affect tactical operations. As Chart 4-1 shows, the mean temperatures for Germany are not particularly severe; but temperature conditions remain a consideration for combat operations. When coupled with the wind (wind chill factor) even these temperatures may cause cold injury casualties. A 12 MPH wind at 5°F, or a 30 MPH wind at 15°F can cause exposed flesh to freeze.⁹ This can be especially significant in air assault operations because helicopter rotor wash creates a wind effect on personnel in the vicinity of operating aircraft. Low temperatures can also affect wire communications by formation of ice on wire lines and frost action on soil. Mobility of friendly and enemy ground maneuver units can be affected by rising temperatures which melt ice and snow causing stream and river levels to rise, thus reducing cross country trafficability.¹⁰

Snow and rain can affect mobility, personnel and equipment. The critical effect of precipitation (Chart 4-2) in Germany is encountered during the late winter and early spring. During this period the snow begins to melt, the ground begins to thaw and spring rainfall begins. The combined effect can severely limit trafficability for ground elements during this period.¹¹

The visibility aspect of the weather in Germany is reflected in Charts 4-3 and 4-4. Morning fog is frequently encountered throughout the area, especially in the fall,

winter and early spring. It is apparent from the charts that it is not uncommon for the fog to last until midday. During the fall and winter visibility can be expected to be less than 1 km approximately one-third of the mornings.¹² Reduction in visibility due to fog or precipitation reduces capabilities for long range ground and air observation and long range engagement with direct fire weapon systems. Fog, haze and precipitation also can lessen thermal radiation effects of nuclear weapon detonation.¹³

Good visibility favors the force that is defending. The defender can observe enemy activity at long range and take the enemy under fire at maximum standoff distances. Poor visibility favors the attacking force in that it can aid in concealment of movement toward objective areas and facilitates deception operations.¹⁴ Visibility is an especially significant factor for an air assault force that is defending against an enemy mechanized or armor attack. If a defending air assault force experiences visibility conditions of 1000m or less there probably will not be sufficient time available for that force to engage the advancing enemy and maintain the capability to break contact for heliborne movement to subsequent positions. Low visibility conditions can aid an attacking air assault force in a number of ways. Low visibility restricts enemy observation and engagement of heliborne forces enroute to objective areas. During initial insertion of forces in the objective area low visibility aids surprise, confusion of enemy forces and may limit enemy observation and engagement of initial air assault elements.

Low visibility conditions are also perfect for implementation of deception schemes by air assault forces. During periods of low visibility a false insertion of air assault forces in enemy rear areas may cause a great deal of confusion and the diversion of enemy combat elements to search for the non-existent intruders.

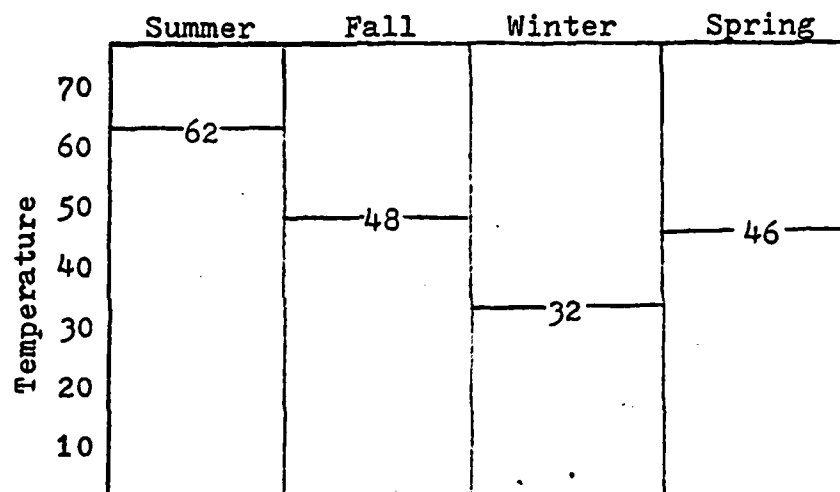
Average cloud ceilings experienced in West Germany are shown on Chart 4-5. Cloud cover can significantly affect aircraft operations because of reduced visibility. Cloud cover can also decrease natural illumination available and increase the effectiveness of artificial illumination.¹⁵ Extremely low ceiling conditions (below 500 ft) can affect air assault operations. Aircraft may be canalized into low valleys and draws to avoid cloud cover at hilltop level. Low ceilings (1000 ft or below) limit the employment of high performance aircraft for friendly air forces as well as the enemy. As a result, air assault operations can be carried out under low ceiling conditions with relatively little risk of being engaged by hostile high performance aircraft. At the same time, however, when the lightly equipped air assault element arrives in the objective area there will probably be no friendly close air support to provide additional firepower. The ability of helicopters to perform at times when high performance aircraft cannot, has increased the concern of many that the Soviet Union's Hind-24, with a potential air to air combat capability, will be used in a close air support role as well as an air to air combat role during periods of low ceiling conditions. At the present time air

assault forces have no viable means to counter this air to air threat.¹⁶

Weather conditions and forecasts must be thoroughly considered as an integral part of the planning process for air assault operations. The weather provides the ever changing environmental background for the battle. An advantage can be gained by the combatant that fully exploits its effects.

Chart 4-1

Mean Temperatures⁴



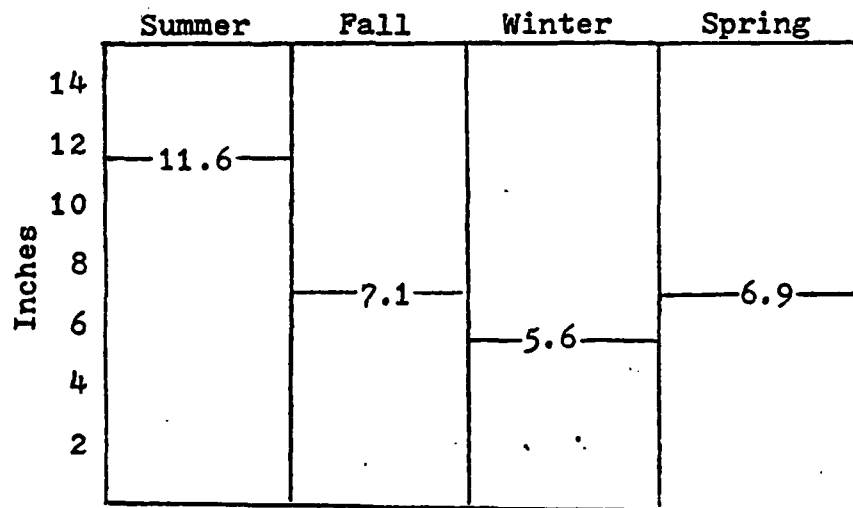
Summer 20 June - 20 Sept
 Fall 21 Sept - 20 Dec
 Winter 21 Dec - 19 Mar
 Spring 20 Mar - 19 June

MEAN TEMPERATURES - WEST GERMANY

Source: FM 100-5, 29 April 1977, p. 13-10.

Chart 4-2

Precipitation⁵



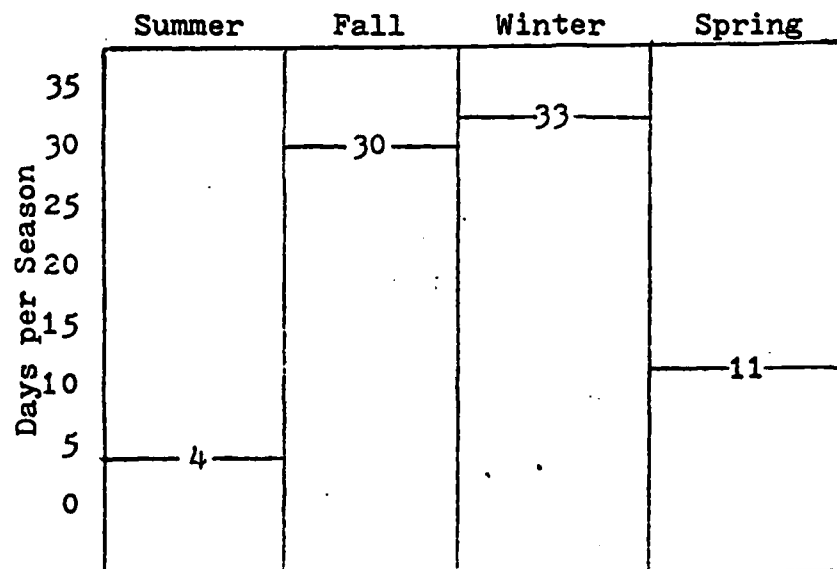
Summer 20 June - 20 Sept
 Fall 21 Sept - 20 Dec
 Winter 21 Dec - 19 Mar
 Spring 20 Mar - 19 June

PRECIPITATION - WEST GERMANY

Source: FM 100-5, 29 April 1977, p. 13-10.

Chart 4-3

Frequency of Fog⁶



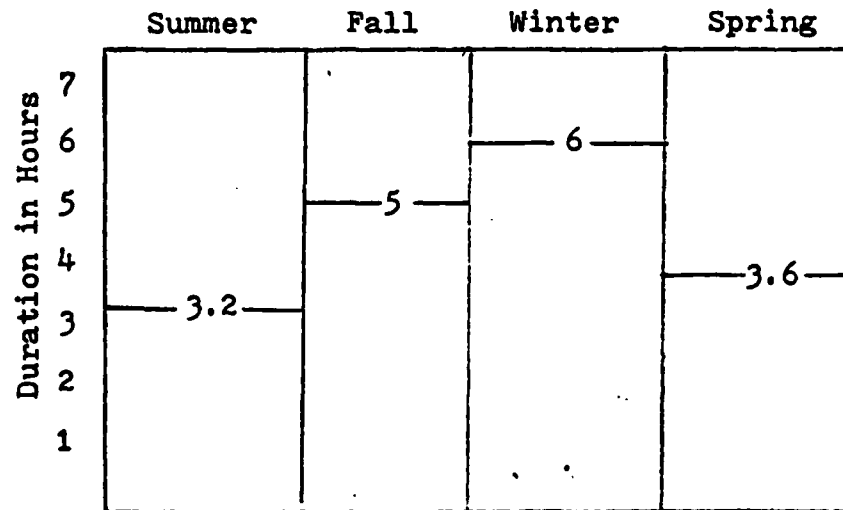
Summer 20 June - 20 Sept
 Fall 21 Sept - 20 Dec
 Winter 21 Dec - 19 Mar
 Spring 20 Mar - 19 June

FREQUENCY OF FOG - WEST GERMANY

Source: FM 100-5, 29 April 1977, p. 13-11.

Chart 4-4

Duration of Fog⁷



Summer 20 Jun - 20 Sept
 Fall 21 Sept - 20 Dec
 Winter 21 Dec - 19 Mar
 Spring 20 Mar - 19 Jun

DURATION OF FOG - WEST GERMANY

Source: FM 100-5, 29 April 1977, p. 13-11.

Chart 4-5⁸

Ceiling Conditions

	Mar-May	June-Aug	Sept-Nov	Dec-Feb
No ceiling	29.7%	33.9%	25.1%	15.7%
2000 plus	49.2	50.2	42.3	41.2
1500 - 2000	3.9	2.4	4.0	5.6
1000 - 1500	5.4	3.9	6.2	9.8
500 - 1000	6.5	5.0	8.0	14.1
Under 500	5.3	4.6	14.4	13.6

Notes:

1. More than 50% cloud cover constitutes a ceiling.
2. The figures above reflect the average ceilings expressed as a percentage of the three month periods.

CEILING CONDITIONS - WEST GERMANY

Source: FM 100-5, 29 April 1977, p. 13-12.

Terrain

The topography of Germany provides the stage on which the battle will be fought. The German terrain is characterized by many hills, streams, forests and villages. Each of these characteristics effects line of sight, or intervisibility, throughout the area.¹⁷ In addition to these factors, Germany has experienced vast urban growth since World War II. This urbanization will have a profound effect on military operations undertaken in the area. Chart 4-6 provides an illustration of the effect of various factors on intervisibility segments in the area of the Fulda Gap and the North German Plain. Chart 4-7 shows the relationship between intervisibility and successful target engagement by ATGM weapon systems. Chart 4-8 reflects probabilities that tank type targets will remain exposed long enough to allow engagement in the area of the Fulda Gap and also on the North German Plains. Chart 4-9 shows the development of urban areas in West Germany.

A quick review of Chart 4-6 will show that intervisibility in the Fulda Gap is most effected by the form of the terrain itself, while on the North German Plain the predominant vegetation on the flat land interrupts line of sight. In any case, it is easy to see that 3000m+ standoff with good observation and fields of fire will simply not be the normal case in West Germany.

Chart 4-7 provides some base data concerning the minimum intervisibility segment length in meters required for successful engagement of tank type targets by ATGM. By taking the segment length required for engagement from

Chart 4-7 and entering that information in Chart 4-8 we can find the probability that the required intervisibility will exist for ATGM engagement in the Fulda Gap and the North German Plain. It is interesting to note that on the North German Plain there is a 50% chance that an intervisibility segment will be less than 75 meters long. This would indicate that there will be very few 3000m or even 2000m ATGM shots unless the attacking force is moving very slowly (4 MPH or less). By the same token, there is a 50% chance that an intervisibility segment in the Fulda Gap will be 200 meters long or less. That provides a much greater opportunity for long range ATGM fire than on the North German Plain, but it requires sufficient ATGM crew training to reduce target detection and acquisition times to take advantage of the greater standoff potential.

Another key feature of terrain in Germany is the impact of urbanization. Any combat operations undertaken in Germany will be affected by the impact of built-up areas within the area of operations. The percentage of total area occupied by built-up areas for German states is shown below:¹⁸

Bavaria	6.5%
Hesse	10.0%
Lower Saxony	9.5%
Baden-Wurttemberg	8.7%
Nordhein-Westfalen	15.0%

Combat operations throughout the country will be closely linked to the battles for key cities, towns and communication centers. The rapid urbanization or "Urban Sprawl" has resulted in the appearance of continuous

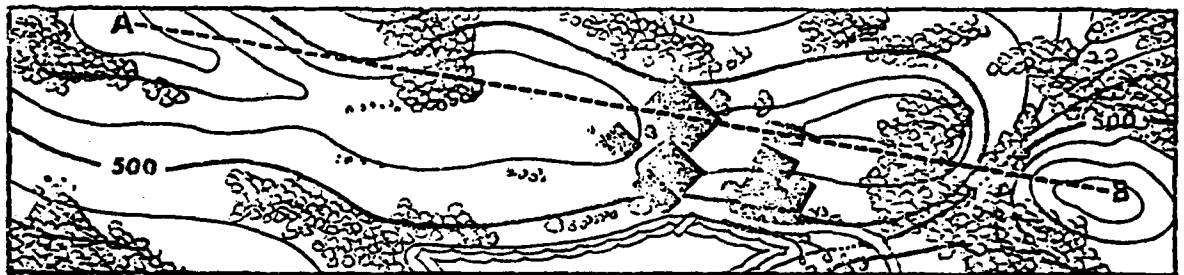
built-up areas which cover many miles and the interconnection of built-up areas between large cities.¹⁹

Some examples of large built-up areas which presently exist around cities in West Germany are shown below:²⁰

Munich	310 sq km
Nuremberg/Furth	247 sq km
Stuttgart	207 sq km
Frankfurt/Mainz/Hanau	560 sq km
Heidelberg/Mannheim	302 sq km
The Ruhr	1155 sq km
Cologne/Bonn	393 sq km

Chart 4-9 provides a representation of the areas of concentrated population and development in West Germany. Built-up areas provide a classic battlefield for light infantry. Possible roles for the air assault division in combat in built-up areas will be discussed in detail in Chapter 7.

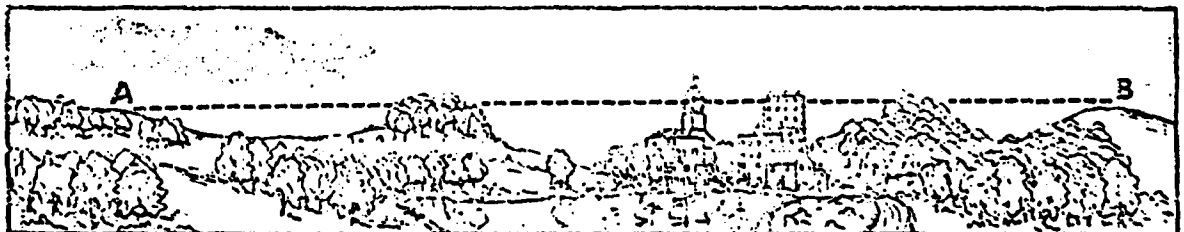
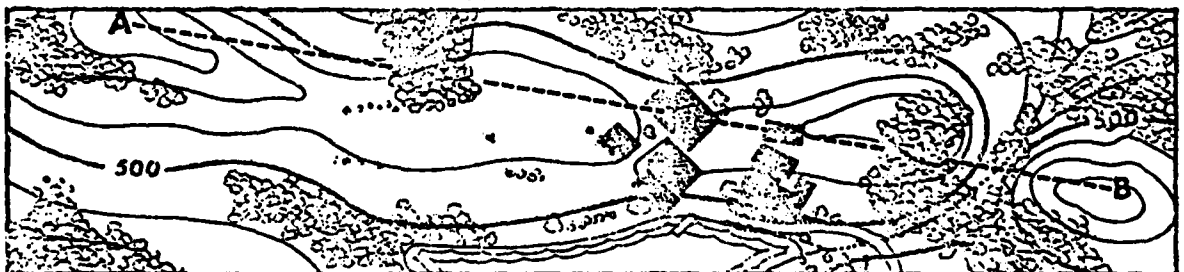
The topography of Germany is fine grained compared to the areas in the US where most of our troops are trained. Germany is more like the Piedmont of Virginia and the countryside of New England. There are many hills, streams, small forests, and villages. It is not easy to find long-range fields of fire for tanks or ATGM. For example, line of sight can be thought of as being like this.



But, due to landforms (hills and valleys), vegetation, and manmade features, line of sight is interrupted as shown in this chart.

AVERAGE PERCENT LOSS OF INTERVISIBILITY BY CAUSE			
AREAS	LANDFORM	VEGETATION	MAN-MADE FEATURES
FULDA GAP	58%	25%	17%
NORTH GERMAN PLAIN	21%	78%	1%

As a result of this loss of intervisibility, line of sight is broken into segments as depicted here.



INTERVISIBILITY LOSS BY CAUSE

21
Chart 4-6

Source: FM 100-5, 29 April 1977, p. 13-13.

This chart portrays the minimum segment lengths necessary to achieve a hit when firing an ATGM, given the target range and speed.

TYPICAL MINIMUM SEGMENT LENGTHS (METERS) FOR SUCCESSFUL ENGAGEMENTS							
RANGE (METERS)	APPROX. MISSILE FLIGHT TIME (SECONDS)	TANK SPEEDS (MILES PER HOUR)	DETECTION AND ACQUISITION TIMES (SECONDS)				
			10	20	30	40	60
1000	5	4	27	45	63	81	117
		8	54	90	126	162	234
		13	90	150	210	270	390
2000	10	4	36	54	72	90	126
		8	72	108	144	180	252
		13	120	180	240	300	420
3000	15	4	45	63	81	99	135
		8	90	126	162	198	270
		13	150	210	270	330	450

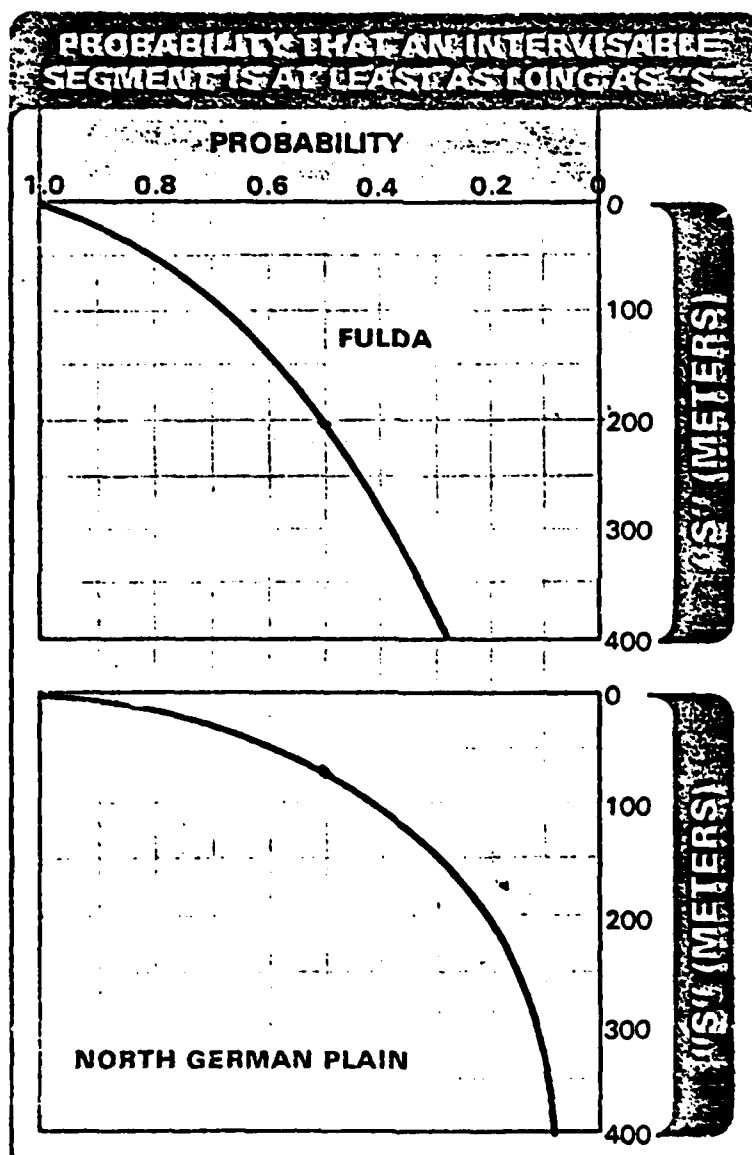
As an example, if an ATGM attacks a target at 2000 meters, the missile time of flight is 10 seconds. If the gunner acquires

and fires in 10 seconds at a tank moving toward him at a rate of 8 mph, the tank must remain exposed for 72 meters to score a hit.

Source: FM 100-5, 29 April 1977, p. 13-14.

22
Chart 4-7

The probability that the tank will remain exposed the required length of time is shown here.



These curves show that the hills and forests in the American sector provide more exposure for attacking tanks than the flat land of the North German Plain where attacking tanks are more often screened from view by vegetation.

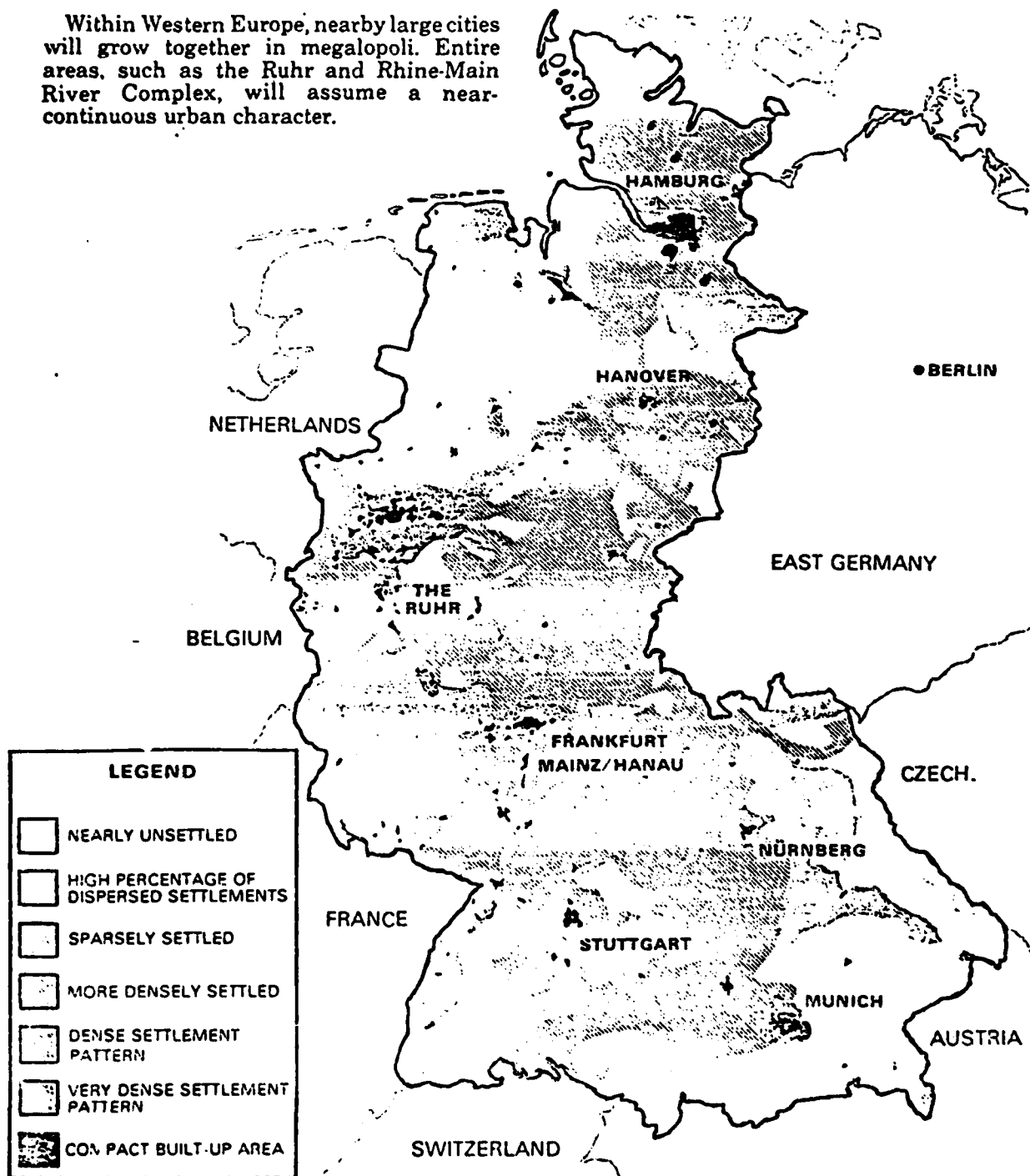
In the previous example, the tank had to remain exposed for 72 meters. In the Fulda region, the gunner would have a 73% chance

of this occurring. ATGM training must take this into account. Gunners must practice acquiring and engaging targets that are

Source: FM 100-5, 29 April 1977, p. 13-15.

23
Chart 4-8

Within Western Europe, nearby large cities will grow together in megalopoli. Entire areas, such as the Ruhr and Rhine-Main River Complex, will assume a near-continuous urban character.



This map shows the nature of built-up area development in West Germany.

Source: FM 100-5, 29 April 1977, p. 14-17.

24
Chart 4-9

Summary

The operational environment in central Europe can have a significant impact on the combat operations of any type military unit. An advantage will accrue to the commander that best understands that environment and its impact on the capabilities and limitations of his opponent. The inherent capabilities and limitations of air assault units can be carefully interwoven with the operational environment in western Europe to determine possible roles and missions for the air assault division.

Notes

- 1 Field Manual 30-5, Combat Intelligence, Department of the Army, Washington, D.C., 30 October 1973, p. 2-15.
- 2 Ibid., p. 2-18.
- 3 Field Manual 100-5, Operations, Department of the Army, Washington, D.C., 29 April 1977, p. 13-10.
- 4 Ibid., p. 13-10.
- 5 Ibid., p. 13-10.
- 6 Ibid., p. 13-11.
- 7 Ibid., p. 13-11.
- 8 Ibid., p. 13-12.
- 9 Ibid., p. 13-12.
- 10 Ibid., p. 2-19.
- 11 Ibid., p. 13-10.
- 12 Ibid., p. 13-11.
- 13 Field Manual 30-5, p. 2-18.
- 14 Ibid., p. 2-18.
- 15 Ibid., p. 2-18.
- 16 "Air Superiority at the Treetops," Military Review, March 1979, pp. 2 - 9.
- 17 Field Manual 101-5, p. 13-13.
- 18 Ibid., p. 13-16.
- 19 Ibid., p. 13-16.
- 20 Ibid., p. 13-16.
- 21 Ibid., p. 13-13.
- 22 Ibid., p. 14-14.
- 23 Ibid., p. 13-15.
- 24 Ibid., p. 14-17.

CHAPTER 5

THE THREAT

Introduction

The underlying principle of Soviet tactical doctrine is that decisive results are achieved only through offensive action. Seizing and maintaining the initiative on the battlefield is the basic element of success.¹ In order to achieve success, the Soviet armed forces adhere to several basic principles.² These principles are discussed below:

Mass - Overwhelming the enemy leads to victory. This principle is reflected in two major areas of Soviet ground force operations--the deliberate attack and the tactical employment of artillery.³

Momentum - The enemy can be destroyed by employing mass with speed. A high tempo of operations is maintained to destroy the enemy quickly. This principle is reflected in the ground force use of the meeting engagement and the hasty attack.⁴

Continuous Combat - Mass is applied against the enemy continuously. Combat continues day and night, under poor visibility conditions and in bad weather.⁵

Offense - Since decisive results are only achieved through offensive action, the Soviet ground forces defend only to allow an attack to go on somewhere else, or to regroup/

resupply.⁶ Even in defensive situations, the Soviets will retain large armor reserves to accomplish the inevitable counterattack so that the offensive may be continued.⁷

Threat Tactics

Soviet forces are normally organized into echelons for both offensive and defensive operations. Each commander from front to battalion level determines the number of echelons required for a specific operation. Normally, the force is arrayed in two echelons.⁸

Offensive Tactics

The Soviets believe that to be successful on the modern battlefield, high levels of momentum must be achieved and maintained. They expect to advance 30 to 50 km a day in a conventional environment and 60 to 100 km a day in a nuclear environment. This incredible momentum is sustained through the use of echeloned forces. Continuous operations are achieved by passing succeeding echelons through the first echelon, thus continuing operations with fresh forces.⁹ The Soviets recognize three types of offensive action. These are the meeting engagement, the attack of a defending enemy and the pursuit.¹⁰

The meeting engagement occurs when two forces are moving toward each other and make contact with little or no warning. When the Soviets encounter an enemy force in this type situation, they immediately conduct a frontal attack or envelopment.¹¹ The Soviets expect the attack from march

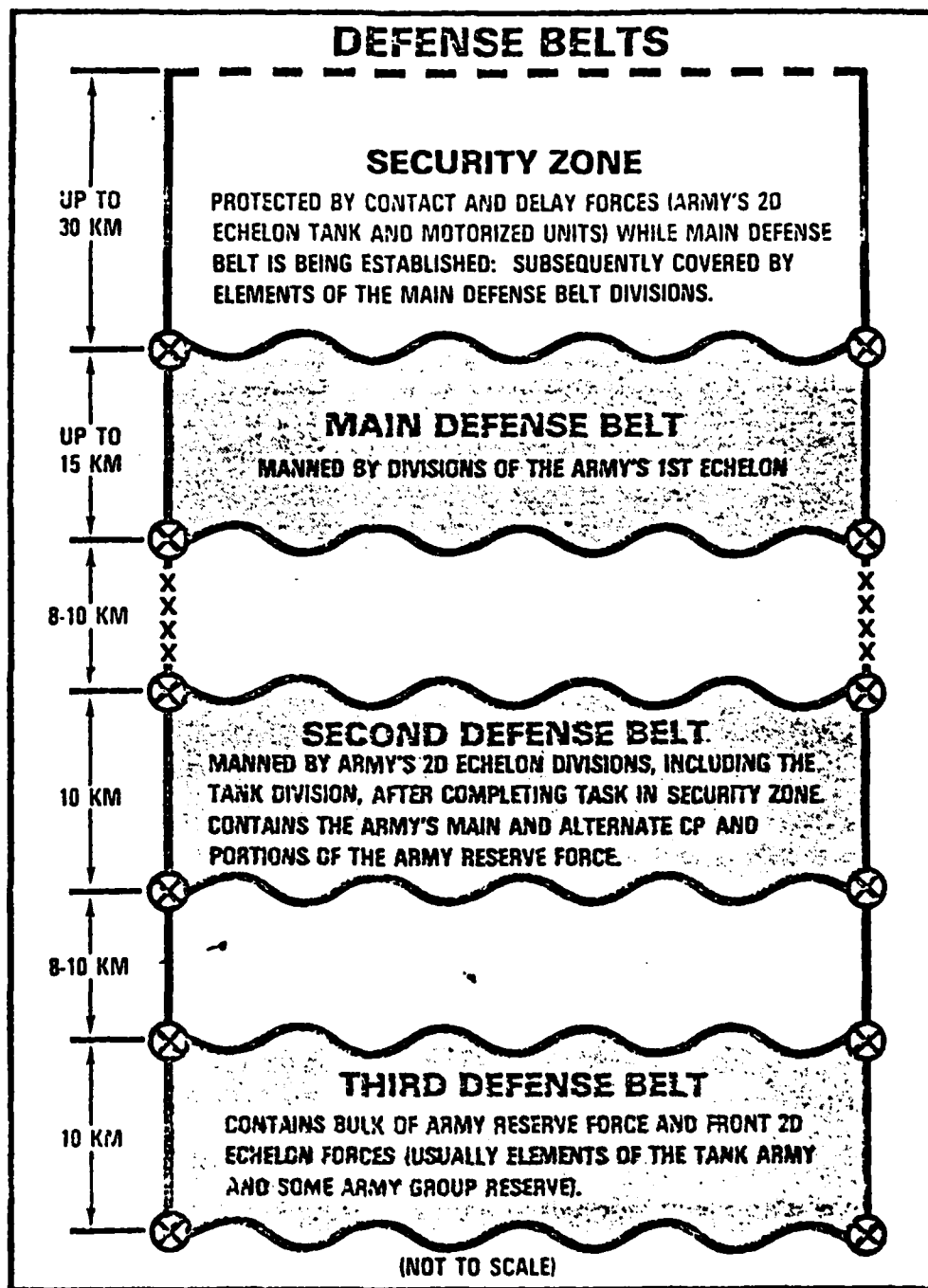
formation to be the predominate form of offensive action, especially in a nuclear warfare environment.¹²

The attack of a defending enemy (sometimes called the breakthrough) is attempted against a defensive position only when a hasty attack cannot be successful. The purpose of the operation is to rupture the enemy defenses, allowing exploitation forces (2nd echelon elements) to continue the attack deep into the enemy rear. This type of attack is well-planned and stresses firepower, mobility, maneuver and continuous momentum.¹³

The pursuit is an offensive operation designed to bring about the final destruction of the enemy force. This operation is characterized by swift deep thrusts to strike the enemy's most vulnerable areas. Normally, the lowest level force that will initiate a pursuit is the regiment. Once begun, a pursuit can only be terminated by the army or higher commander.¹⁴

Defensive Tactics

The defense is a temporary situation for Soviet forces. The defense is normally assumed while seeking the opportunity to attack, or to support an attack elsewhere through economy of force operations. The defense is structured to inflict heavy losses, destroy attacking forces, hold tactically advantageous terrain and to create conditions favorable for the resumption of the offense.¹⁵ The defense is organized into successive belts as shown in Figure 5-1. Each belt is established as a series of mutually supported,



SOVIET DEFENSIVE BELTS

Figure 5-1³⁰

Source: Training Circular 6-4-2, 31 December 1976, p. 17.

self-sufficient areas. Each belt is manned by motorized rifle units augmented by tanks and supported by artillery. A reserve is maintained for each belt.¹⁶ The security zone is established to deceive and delay the enemy. The security zone is manned by units from the combined arms army second echelon.¹⁷ The main defensive belt provides the backbone of the Soviet defenses. This belt is manned by the motorized rifle divisions of the army's first echelon. The main defensive belt is organized to stop and destroy the attacking force.¹⁸ The second defensive belt consists of prepared but usually unoccupied positions. This belt is located approximately 8 to 10 km to the rear of the main defensive belt. The second echelon divisions of the army establish and defend these positions. The purpose of this belt is to contain an attacking enemy until a counter-attack can be executed to destroy him.¹⁹ The third belt contains army and front reserves, which are designated to counterattack enemy elements being contained by the second belt.²⁰

Chart 5-2 provides a summary of Soviet tactical doctrine, including frontages, echelonment and required force ratios.

Threat Organizations

It is estimated that the Soviet ground forces are made up of approximately 1,825,000 personnel. This is approximately twice the size of the active US Army and Marine Corps combined.²¹ The ground forces are organized

SOVIET TACTICAL DOCTRINE

31
Figure 5-2

	Minimum force ratio for any successful attack	Minimum for attacks on main axis
Personnel	2-3:1	6:1
Tanks	4:1	8:1
Artillery	5:1	10:1
Maneuver battalions	3:1	4-5:1

FRONTAGES

	Offense		Defense
	Main attack	Supporting attack	
Mtz rifle div	10-16 km	20-30 km	20-30 km
Mtz rifle regt (MRR)	4-6 km	10-16 km	10-15 km
Mtz rifle bn (MRB)	1,000-1,500 m	1,700-2,300 m	3-5 km
Tank div	10-15 km	25-30 km	20-30 km
Tank regt	4-6 km	12.5-15 km	10-15 km
Tank bn	1,000-1,500 m	1,700-2,300 m	3-5 km

MASS

To conduct a classic breakthrough, the mtz rifle div or tk div will mass, within its assigned zone of action, on a 4-7 km front. Being extremely vulnerable to conventional and nuclear fires while massed, the Soviet commander emphasizes speed for conduct of the breakthrough. Two to four hours are allotted from the time the division begins to mass until the breakthrough is completed and the forces again begin to disperse.

OBJECTIVES

1. Immediate. Directed by army commander and oriented on the enemy's direct support artillery and brigade/division reserves. Seized by the division first echelon.
2. Subsequent. Approximately 30 km from LD in nonnuclear; 60 km deep in nuclear environment. It is the primary mission for a 24-hour period as assigned to the division by the army commander.

OFFENSIVE ECHELONMENT, DELIBERATE ATTACK

	1st Echelon	2d Echelon	Reserve
MRD	3 MRR	Tk Regt	Indep Tk Bn
MRD	2 MRR (+)	1 MRR	Tk regt
MRR ¹	2 MRB (+)	1 MRB	Tk bn (-)
MRB	3 MR Co	None	1 Pk (AT, engr)
Tk div	2 tk regt (+)	1 tk regt (+)	MRR (-)
Tk regt	2 tk bn (+)	1 tk bn	1 MR Co
Tk bn	3 tk co	None	1 Pk (tk, engr)

¹When a tk bn from the tk regt is attached to the MRR it may: (1) be assigned to the first echelon and provide direct fire support, (2) be assigned to the second echelon, or (3) be assigned to the reserve.

²With an attached MRB, Tk regt may conduct pursuit operation without attachment of MRB.

DEFENSIVE ECHELONMENT

	1st Echelon	2d Echelon	Reserve
MRD	2 MRR	1 MRR	Tk regt
MRR	2 MRB (+)	1 MRB (+)	Co-sized unit
MRB ¹	2 MR Co (+)	1 MR Co (+)	Platoon
Tk div	The tk div is ill-suited for the defense due to its limited amount of mtz rifle units. When forced to defend with a tk div, every effort will be made to quickly replace it with a MRD.		

¹When in MRR 2d echelon, MRB normally defends in one echelon.

SUMMARY OF SOVIET DOCTRINE*

Source: Soviet Commanders Tactical Planning Worksheet, July 1979

into 168 divisions as shown below:²²

111 Motorized Rifle Divisions

50 Tank Divisions

7 Airborne Divisions

In order to keep these figures in the proper perspective, it is necessary to point out that the personnel strengths of Soviet divisions are less than that of comparable US divisions.²³

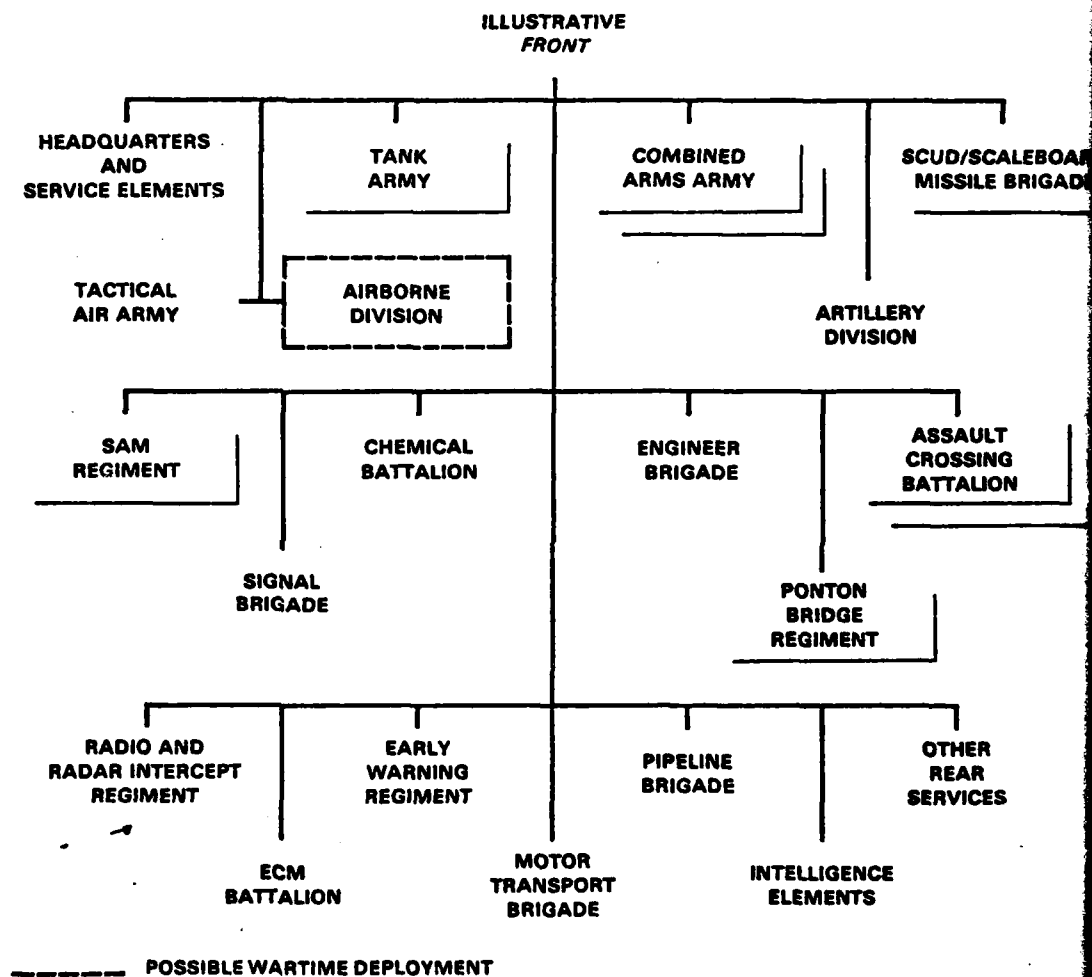
	Mechanized Division	Armored Division	Airborne Division
US	16,000	16,500	15,000
USSR	14,000	11,000	7,000

Organizational diagrams for various Soviet units are found at Figures 5-3 through 5-9.

The Soviet NBC Threat

The Soviet Union is said to have the best organized, equipped and trained army in the world with regard to NBC warfare operations.²⁴ NBC training is conducted frequently and realistically. Equipment is designed with features which specifically provide capabilities for NBC operations. NBC functional organizations can be found down to regimental level.

Soviet NBC Doctrine - The Soviets view nuclear weapons as a fundamental, integral part of their fighting capability. The role of their nuclear weapons is to destroy enemy nuclear delivery capabilities; to destroy major troop concentrations; and to preempt anticipated nuclear strikes against the Soviet

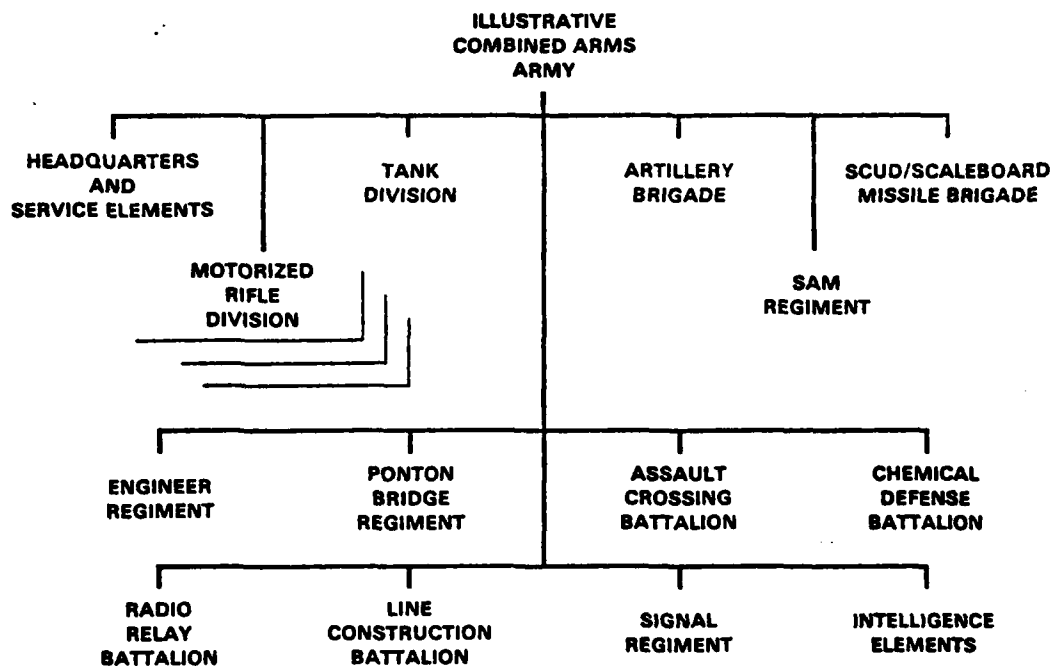


FRONT.

SOVIET FRONT ORGANIZATION

Figure 5-3

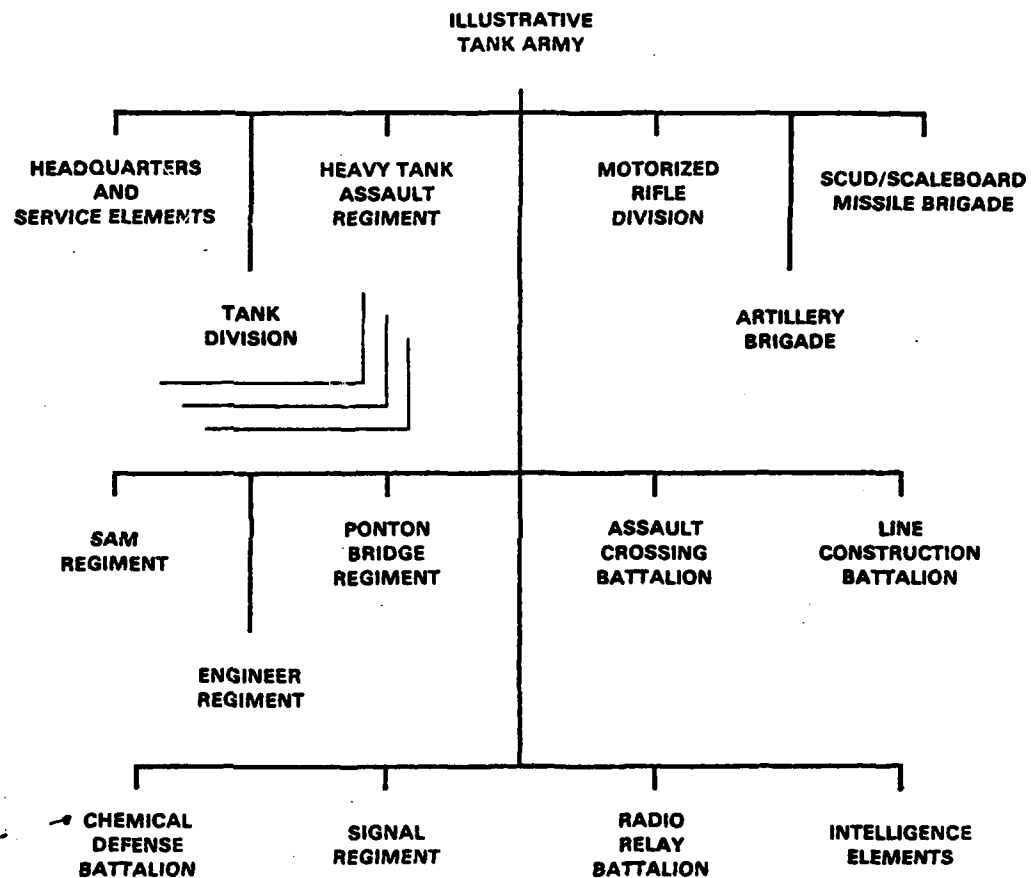
Source: Handbook on the Soviet Armed Forces, February 1978, p. 8-6.



SOVIET COMBINED ARMS ARMY ORGANIZATION

Figure 5-4³³

Source: Handbook on the Soviet Armed Forces, February 1978, p. 8-7.

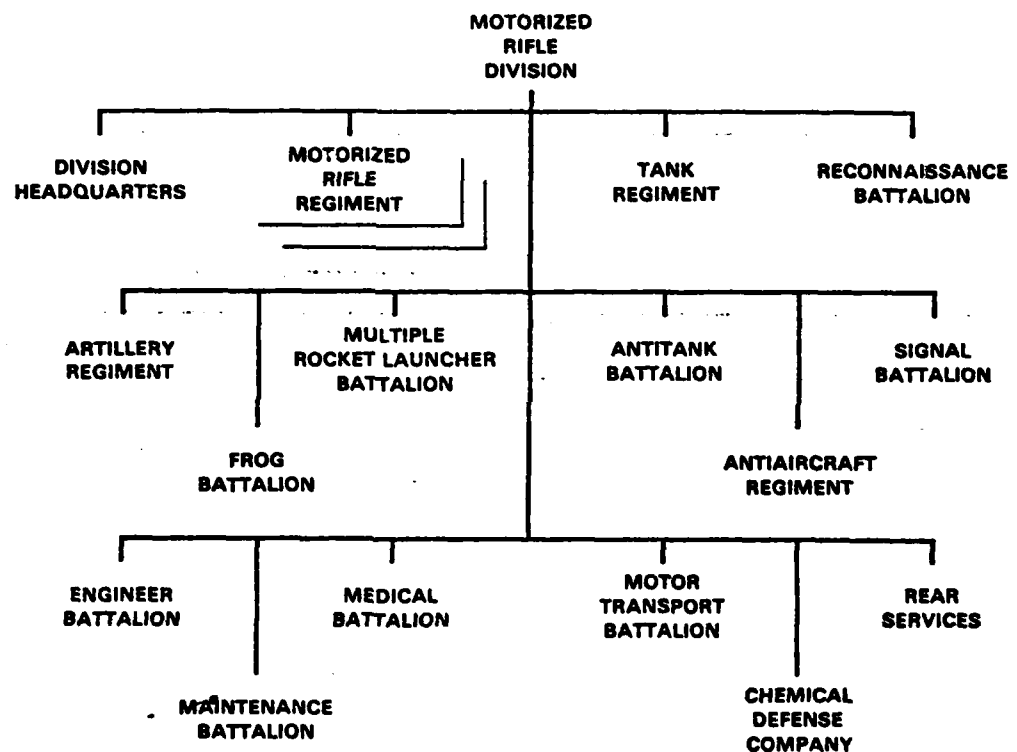


Tank Army.

SOVIET TANK ARMY ORGANIZATION

Figure 5-3

Source: Handbook on the Soviet Armed Forces, February 1978, p. 8-8.

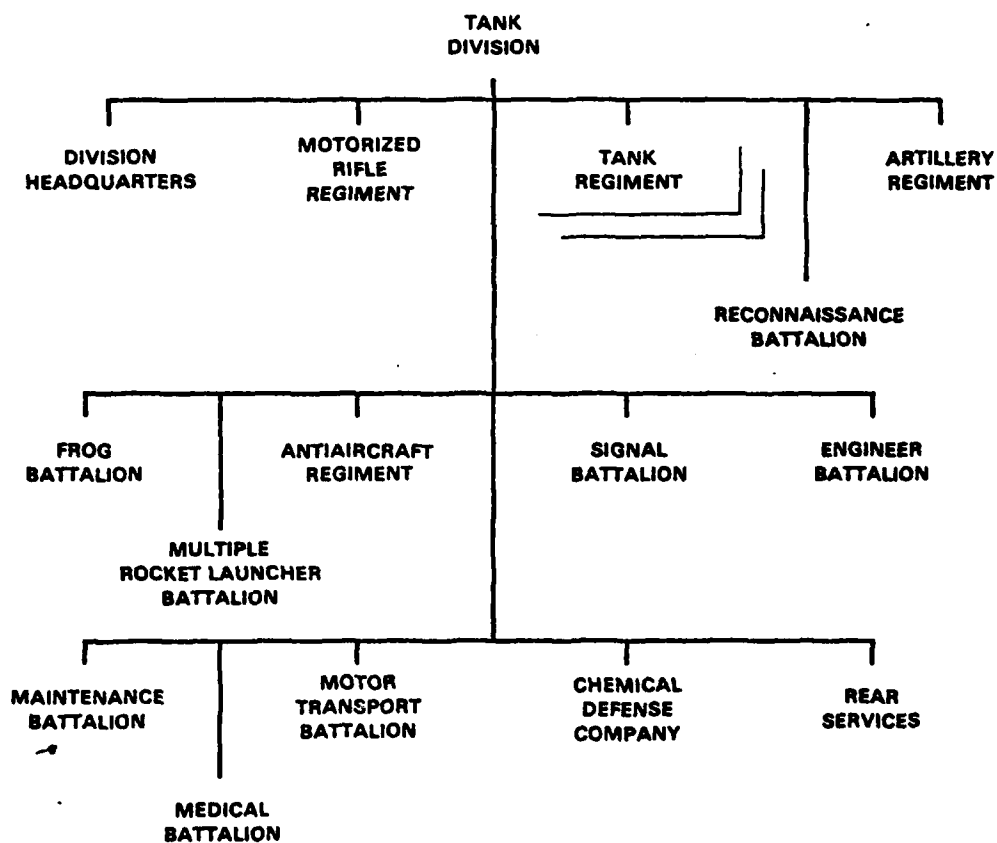


Motorized Rifle Division.

SOVIET MOTORIZED RIFLE DIVISION ORGANIZATION

35
Figure 5-6

Source: Handbook on the Soviet Armed Forces, February 1978,
p. 8-9.

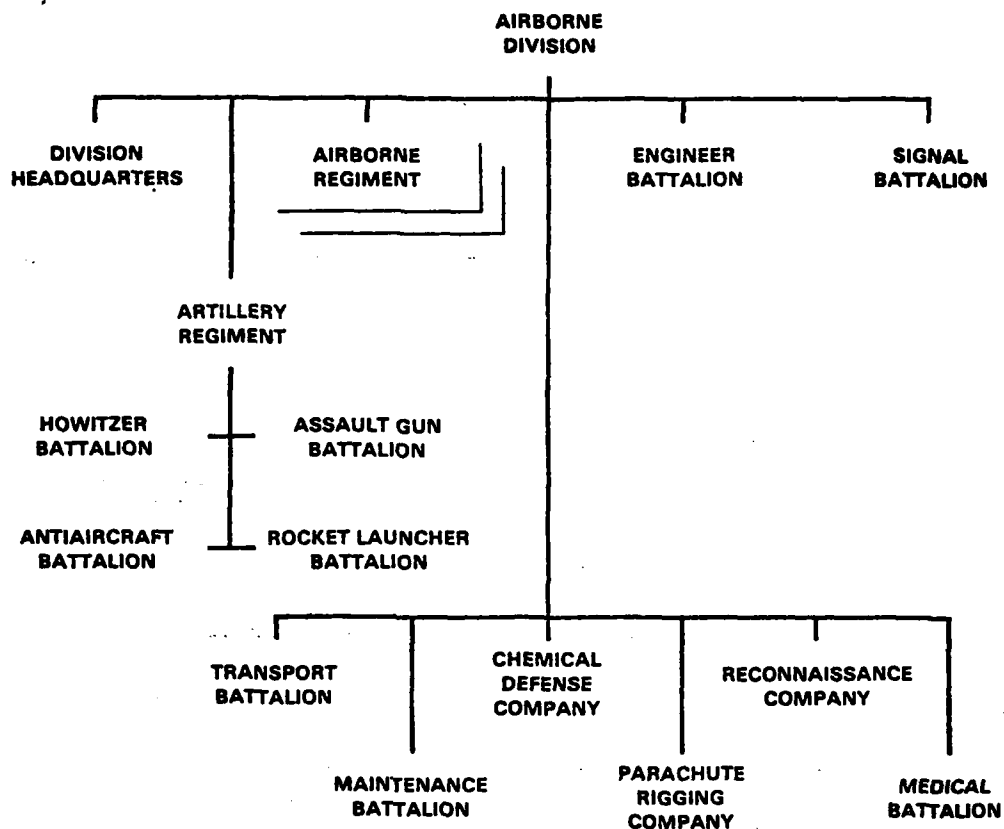


Tank Division.

SOVIET TANK DIVISION ORGANIZATION

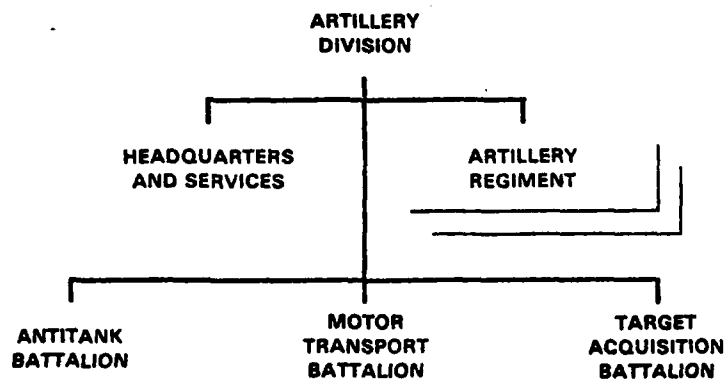
36
Figure 5-7

Source: Handbook on the Soviet Armed Forces, February 1978, p. 8-10.



Airborne Division.

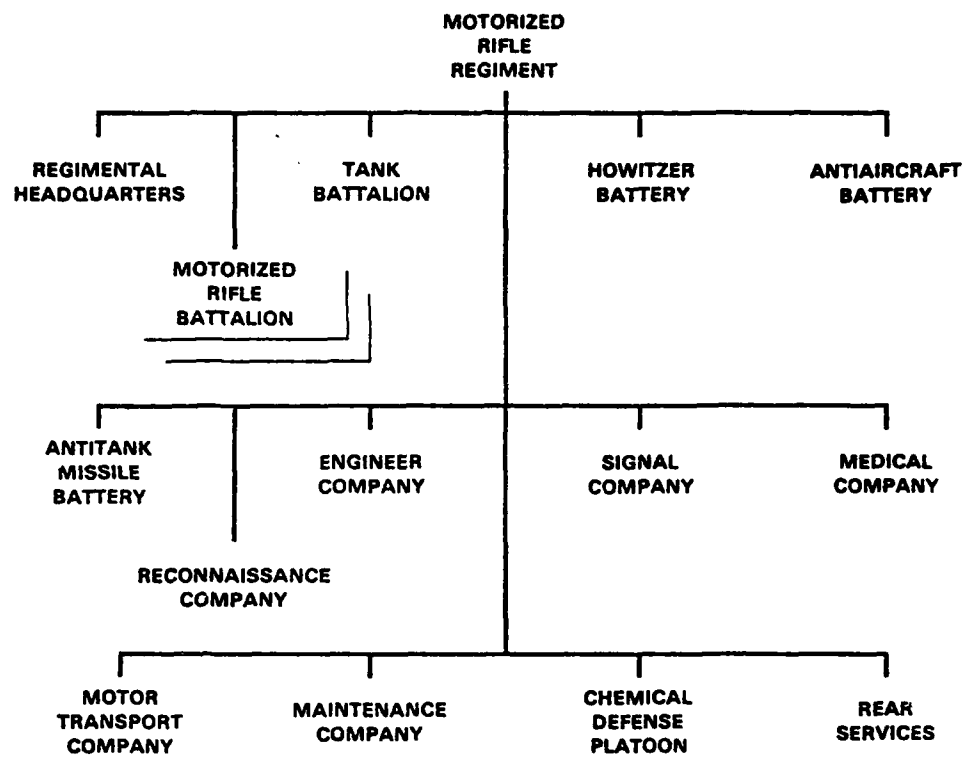
37
FIGURE 5-8



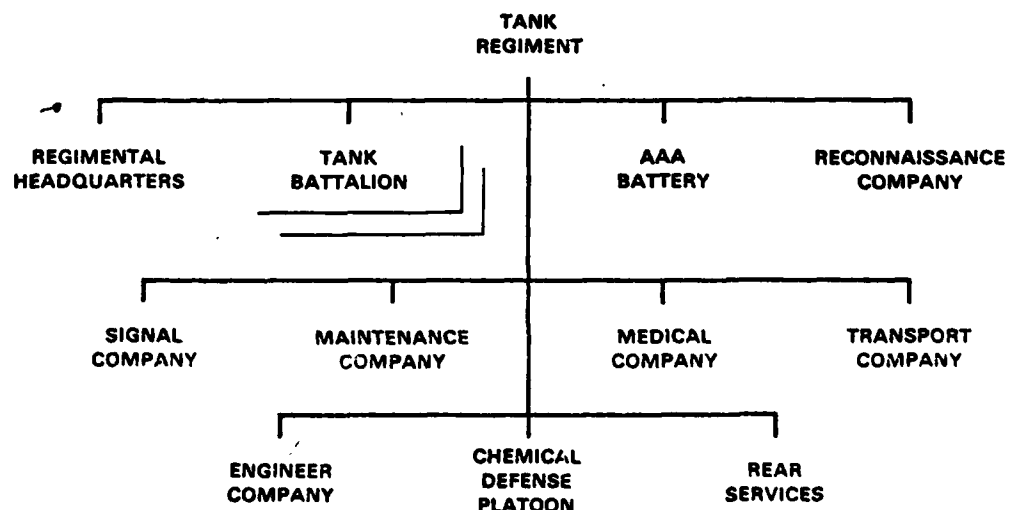
Artillery Division.

AIRBORNE DIVISION AND ARTILLERY DIVISION ORGANIZATION

Source: Handbook on the Soviet Armed Forces, February, 1978, p. 8-11.



Motorized Rifle Regiment.



Tank Regiment.

MOTORIZED RIFLE AND TANK REGIMENT ORGANIZATION

32
Figure 5-9

Source: Handbook on the Soviet Armed Forces, February, 1978 p. 8-12. 84

AD-A093 778

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KS F/G 15/7
THE ROLE OF THE AIR ASSAULT DIVISION ON THE EUROPEAN BATTLEFIELD--ETC(U)
JUN 80 C J MCHUGH

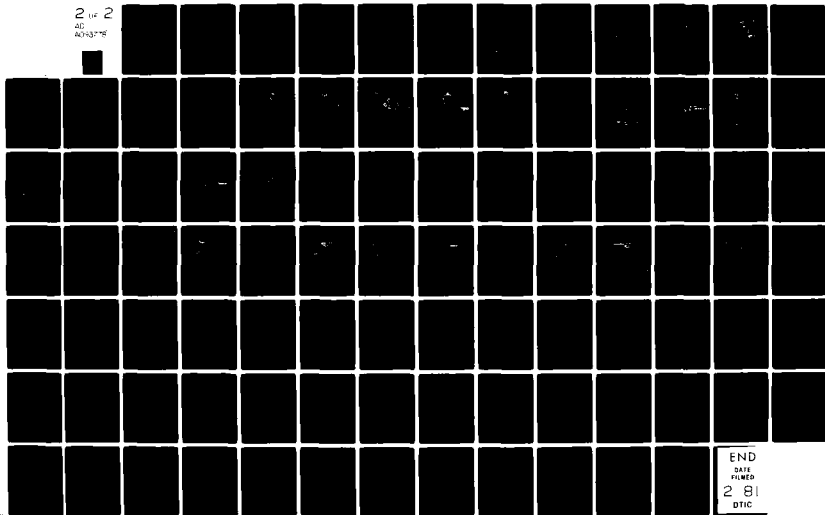
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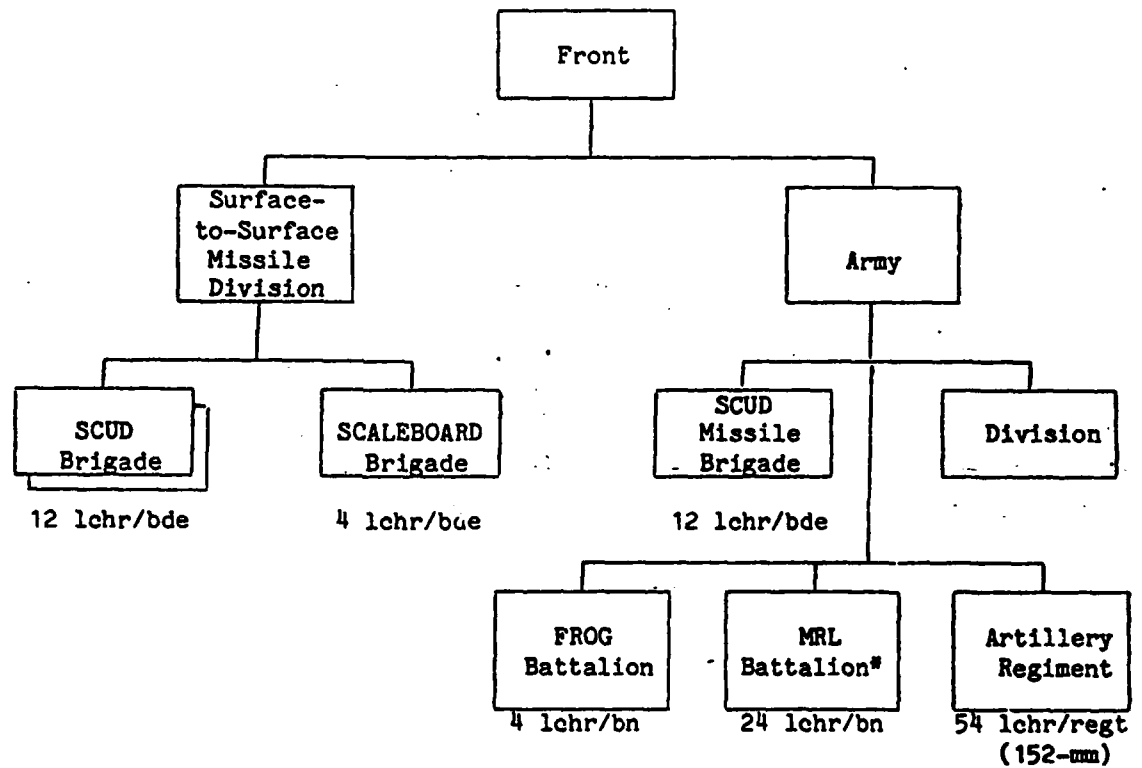
forces. Nuclear strikes will be exploited by airborne or high-speed, motorized, combined arms forces.²⁵

Massive chemical strikes may be employed alone or in conjunction with nuclear operations. Chemical weapons will be employed to kill personnel or to restrict enemy use of terrain or equipment. A partial listing of potential chemical targets might include artillery units, reserve positions, airfields and logistic facilities.²⁶ Figure 5-10 shows the delivery systems available within Soviet ground force organizations for the delivery of nuclear and chemical munitions. Figure 5-11 provides information on Soviet tactical ballistic missiles, to include range, warheads and prelaunch time requirements.

Soviet Radioelectronic Combat

This is the Soviets' term for electronic warfare. The Soviets undertake radioelectronic combat to disrupt or destroy enemy command and control means. The Soviets can be expected to try to degrade or destroy approximately 50 percent of enemy communications capabilities through a combination of electronic jamming and suppressive fires.²⁷ Soviet priorities for radioelectronic targeting are generally as indicated below:²⁸

- 1 Nuclear delivery capable units
- 2 Command posts, communication centers, radar stations
- 3 Conventional field artillery, tactical air and air defense units



*Delivery system for chemical and conventional munitions only.

Soviet delivery systems for nuclear and chemical munitions.

Source: RB 3-1, NBC Operations, December 1978
p.2-6.

39
Figure 5-10

2-6

Figure provides the maximum range, type warhead, launcher type, and prelaunch time for the tactical ballistic missiles.

	<u>Equipment</u>	<u>Maximum Range (KM)</u>	<u>Ammunition</u>	<u>Notes</u>
MISSILES	SCALEBOARD SS-12	800	Nuclear, 1 MT	Truck launcher, megaton warhead; prelaunch time--2-4 hours; iner- tial guidance
	SCUD-A SS-1B	150	Nuclear, chemical, HE	Tracked-vehicle launcher; pre- launch time--1 hour
	SCUD-B SS-1C	280	Nuclear, chemical, HE	Tracked-vehicle launcher MAZ543; prelaunch time--30 minutes; com- mand guidance
FREE-FLIGHT ROCKETS	FROG-3	35	Nuclear, chemical, HE	Tracked launcher (modified PT-76); prelaunch time-- 30 minutes
	FROG-7	70	Nuclear, chemical, HE	Single-rail launcher on ZIL-135 truck; prelaunch time-- 30 minutes

Tactical ballistic missiles.

Approximately 630 Soviet midrange ballistic missiles (MRBM's) are believed targeted on western Europe with warheads in the megaton range. Some 300 missiles, including the SS-12 SCALEBOARD MRBM and the SS-1 SCUD, are expected to engage deep targets including ports, airfields, and other facilities. Free-flight rockets (FROG) and warheads in the 25-KT class are available at division level for use closer to the FEBA.

These weapons are sited approximately one-third of the maximum effective range from the leading enemy elements in the offense and one-third to one-half of the maximum range in the defense.

40
Figure 5-11

Source: RB 3-1, NBC Operations, December 1978, p. 2-7.

4 Reserves

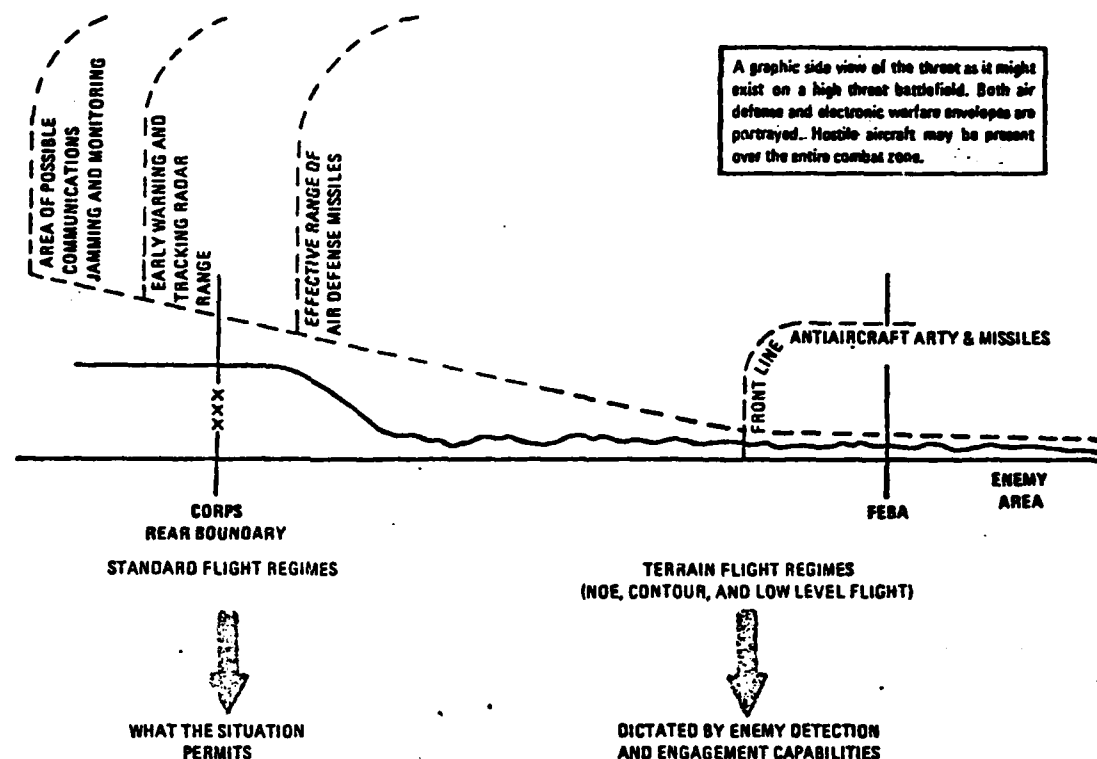
5 Logistic centers

Soviet Air Defense Threat

The Soviet Union makes use of both surface-to-air missile systems and conventional antiaircraft gun systems for air defense. These Soviet systems are modern and effective. In addition to normal air defense systems, the Soviets always designate a portion of each ground maneuver unit to deliver massed small arms fire on attacking aircraft.²⁹ Figure 5-12 provides a general profile of the air defense weapon systems. Following Chart 5-12 are illustrations and general information concerning Soviet air defense systems.

Summary

The Soviet ground forces will attempt to overwhelm their opponents through the use of mass, momentum and continuous combat. These factors will be brought to bear to maintain the offensive. The Soviets can be expected to employ chemical and nuclear weapons in any future conflict. Modern Soviet forces are significant in terms of quality as well as quantity.



CHARACTERISTICS OF AIR DEFENSE WEAPONS

ANTIAIRCRAFT GUNS

MODEL	CALIBER	EFFECTIVE VERTICAL RANGE (METERS)	MAXIMUM RATE OF FIRE (RPM)	FIRE CONTROL	LEVEL OF ASSIGNMENT
ZSU-23-4	23-mm	2,500 TO 3,000 (OPTICS) (RADAR)	1,200	RADAR OR OPTICAL	REGIMENT
ZSU-57-2	57-mm	4,000	240	OPTICAL	REGIMENT
S-60	57-mm	8,000	120	RADAR OR OPTICAL	FRONT/ARMY

SURFACE-TO-AIR GUIDED MISSILES

MISSILE NAME	SLANT RANGE (KM)	LEVEL OF PROTECTION	LEVEL OF ASSIGNMENT
SA-2 GUIDELINE	45	HIGH ALTITUDE	FRONT/ARMY
SA-3 GOA	22	MEDIUM-LOW ALTITUDE	FRONT
SA-4 GANEF	70	MEDIUM-HIGH ALTITUDE	FRONT/ARMY
SA-6 GAINFUL	30-35	LOW-MEDIUM ALTITUDE	ARMY/DIVISION
SA-7B GRAIL Modified	3.5	LOW ALTITUDE	REGT/BN/CO
SA-8 GECKO	10-15	LOW-MEDIUM ALTITUDE	DIVISION
SA-9 GASKIN	7.0	LOW ALTITUDE	REGIMENT

Source: FM 71-100, 30 March 1979, p. 2-12.

41
Figure 5-12

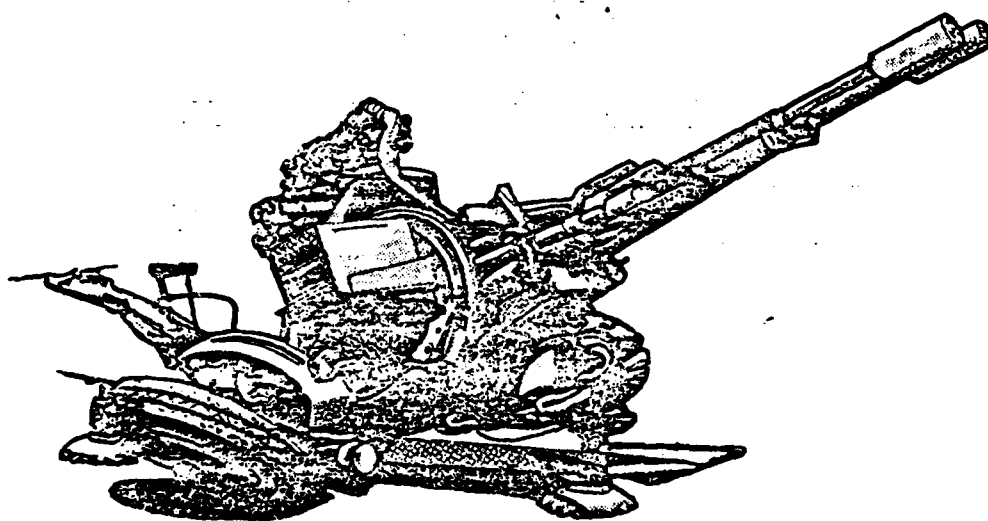
SOVIET AIR DEFENSE SYSTEMS

Air Defense Systems

Air Defense Systems

ZU-23
S-60
ZSU-57-2
ZSU-23-4
SA-7; SA-8
SA-6
SA-9
SA-4

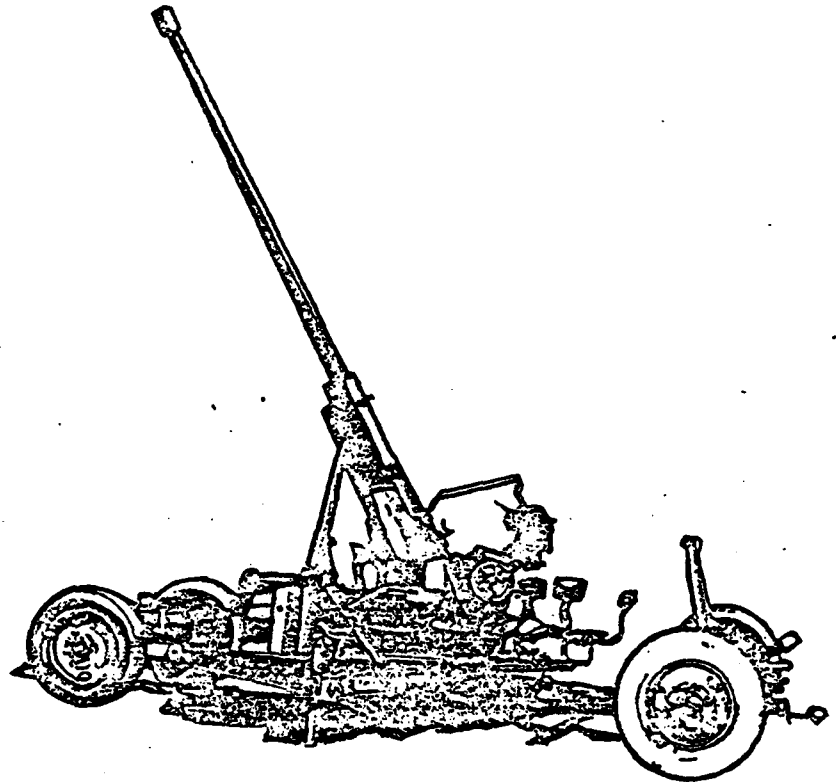
23-mm Automatic Antiaircraft Gun ZU-23 ⁴²



Max Range:			
Horizontal	7,000 m	Elevation	+90°
Vertical	5,100 m	Depression	-10°
Effective AA Range	2,500 m	Traverse	360°
Armor Penetration		Rate of Fire per Tube:	
0°/500 m	25-mm	Cyclic	800-1,000 rpm
Crew	5 men	Practical	200 rpm

Source: Training Circular 6-4-2, 31 December 1976, p. E-1.

Air Defense Systems 57-mm Automatic AA Gun S-60 ⁴³

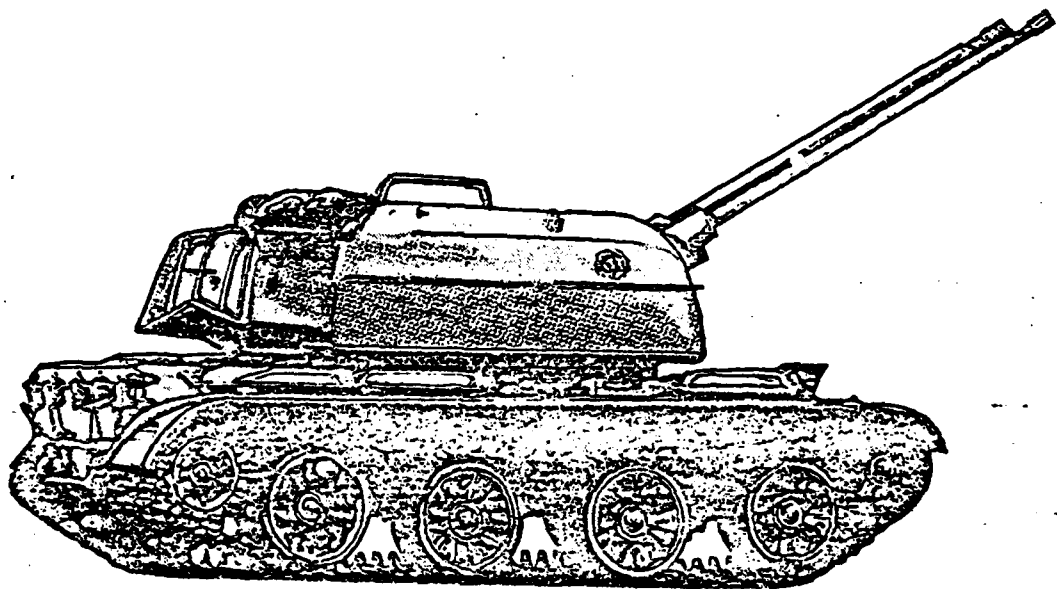


Max Range:	
Horizontal	12,000 m
Vertical	8,800 m
Effective AA Range	6,000 m
Armor Penetration	
0°/500 m	106-mm
Crew	7 men
Elevation	+85°
Depression	-4°
Traverse	360°
Rate of Fire:	
Cyclic	105-120 rpm
Practical	70 rpm

Source: Training Circular 6-4-2, 31 December 1976, p. E-2.

ZSU-57-2⁴⁴

Air Defense Systems



Vehicle

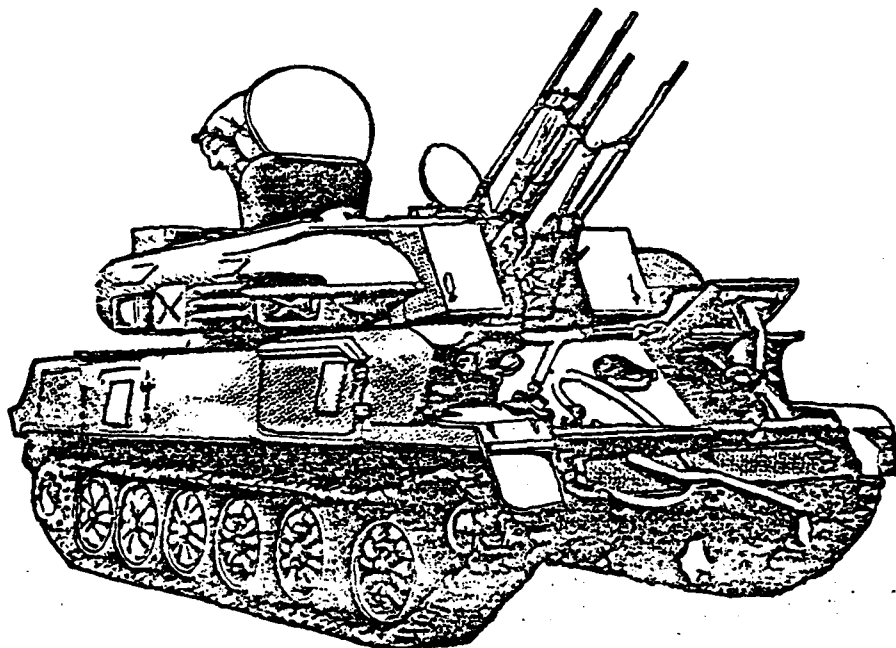
Combat Weight	28.1 tons
Speed	48 kph
Cruising Range	400 km
Crew	6 men

Armament

	Twin 57-mm
Elevation	+85°
Depression	-5°
Traverse	360°
Range	4,000 m
Basic Load	316 rds

Source: Training Circular 6-4-2, 31 December 1976, p. E-3.

Air Defense Systems **ZSU-23-4** ⁴⁵



Vehicle

Combat Weight	14 tons
Speed	44 kph
Cruising Range	260 km
Crew	4 men

Armament

	Quad 23-mm
Elevation	+80°
Depression	-7°
Traverse	360°
Range	3,000 m w/radar 2,500 m w/o radar

Vulnerabilities

Hull and turret can be penetrated by heavy mg fire.
Treads and roadwheels are vulnerable to destruction by field artillery weapons.
HE fragmentation can penetrate its armor, destroy the radar dish, and rupture the coolant sleeves of the liquid-cooled 23-mm cannon.

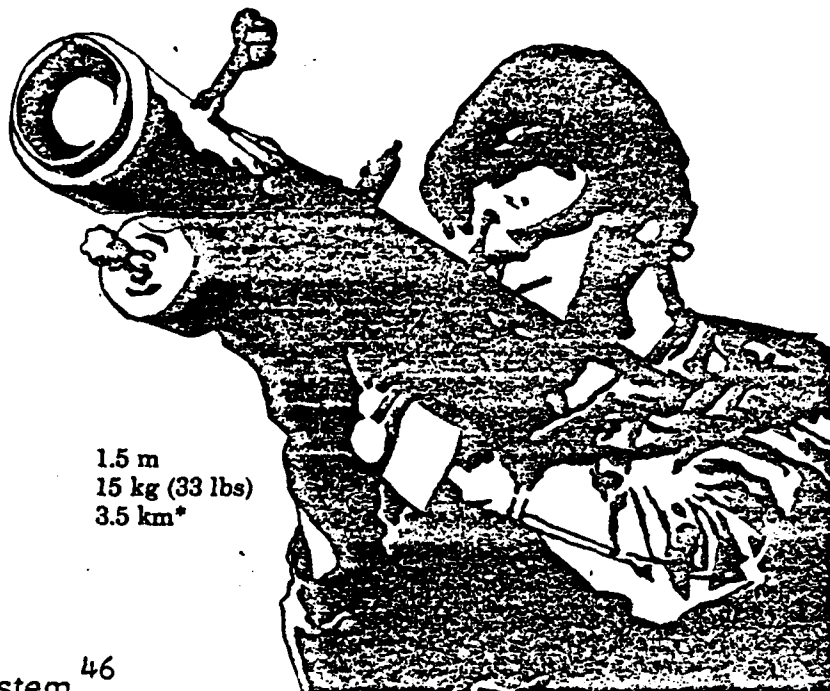
Source: Training Circular 6-4-2, 31 December 1976, p. E- .

SA-7 Grail Guided Antiaircraft Missile ⁴⁶

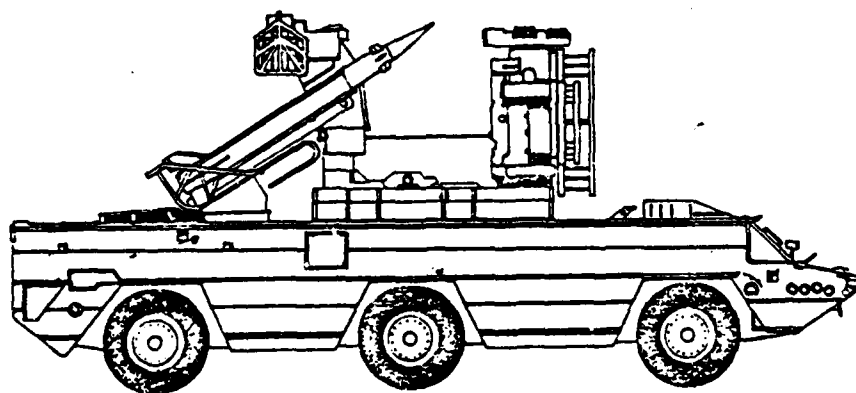
Air Defense Systems

Length	1.5 m
Weight	15 kg (33 lbs)
Slant Range	3.5 km*

*Exact range is classified.



SA-8 Missile System ⁴⁶

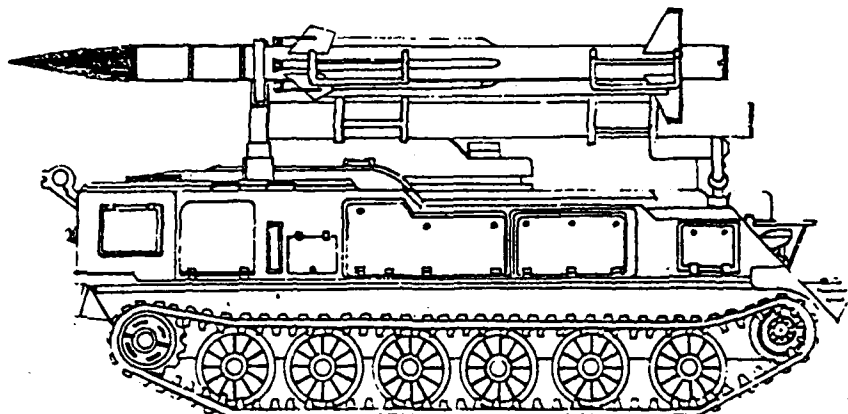


NATO code name GECKO. The SA-8 SHORAD air defense missile operates by command guidance and is effective at altitudes of from about 150 to 20,000 feet. It is fully self-contained with acquisition, tracking, and two missile guidance radars mounted on a six-wheeled, amphibious vehicle which is about 29'6" long. Four missiles, each about 10' long, are carried in an integrated mount. The system contains an electro-optical tracker, probably television. With a slant range of approximately 10-15 kilometers, the highly mobile SA-8 can provide close support to armored and mechanized forces.

Source: Training Circular 6-4-2, 31 December 1976, p. E-5.

SA-6 Missile System ⁴⁷

NATO code name GAINFUL. This air defense missile is about 19' long and has a slant range of about 30-35 kilometers. It is powered by an integral solid rocket/ramjet system and is command guided by the STRAIGHT FLUSH fire control radar. The missile carries an HE fragmentation warhead and has a range of about 300 to 33,000 feet.

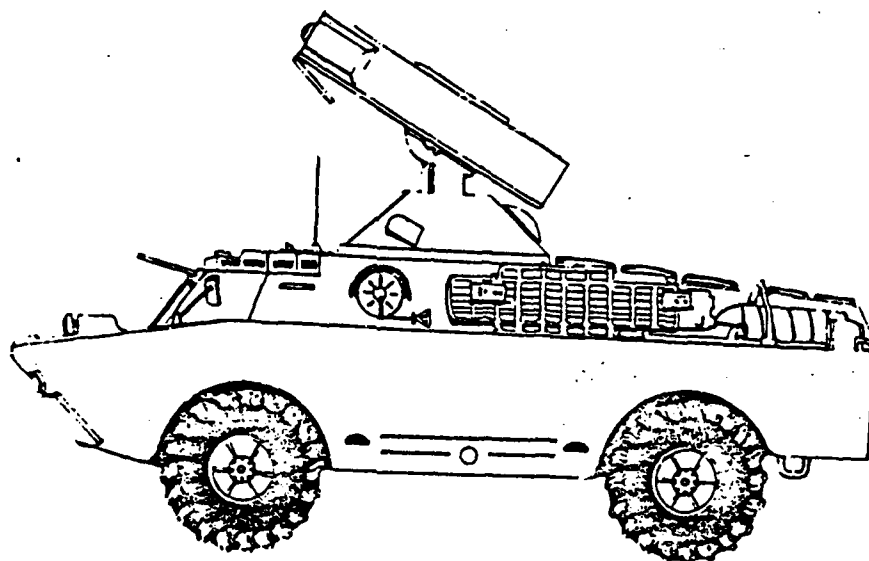


Source: Training Circular 6-4-2, 31 December 1976, p. E-6.

SA-9 Missile System⁴⁸

Air Defense Systems

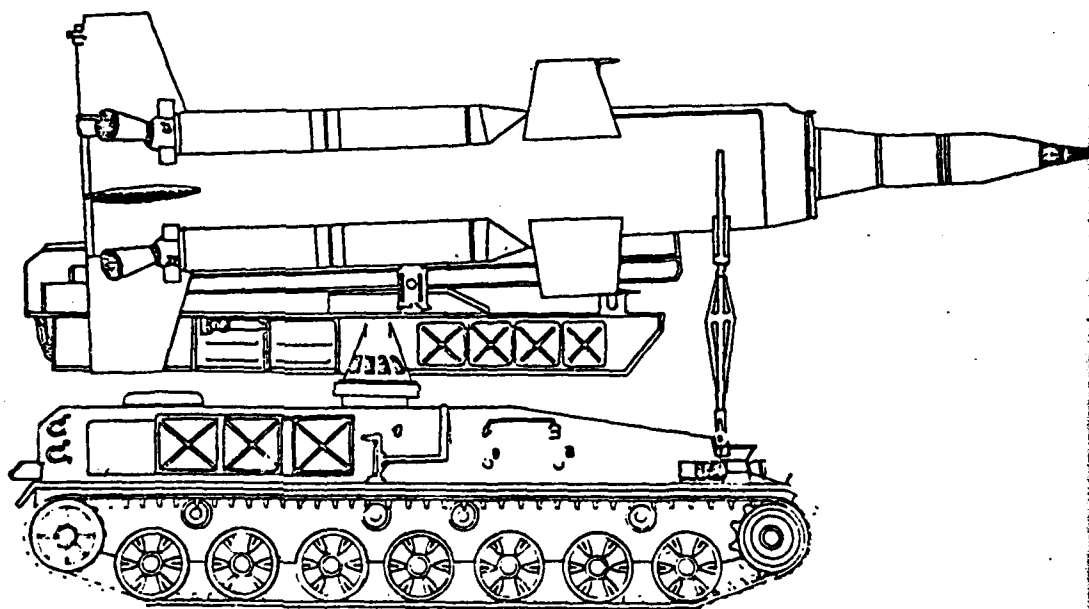
NATO code name GASKIN. This SHORAD air defense system is transported on a modified BRDM-2 amphibious armored vehicle which is 18' long and carries a probable crew of four. The SA-9 slant range is approximately 7 kilometers. The missile has an infrared seeker, an HE warhead, and probably is powered by a solid propellant. Four missile canisters each with one missile are normally carried on the launcher turret. The SA-9 GASKIN can be utilized in conjunction with the ZSU-23-4.



Source: Training Circular 6-4-2, 31 December 1976, p. E-7.

SA-4 Missile System⁴⁹

NATO code name GANEF. This air defense missile is about 29'6" long and has a slant range of approximately 70 kilometers. The GANEF has command guidance to a maximum altitude of about 80,000 feet. The missile is powered by four solid fuel boosters with canted nozzles and a ramjet sustainer. It carries an HE proximity fuzed warhead.

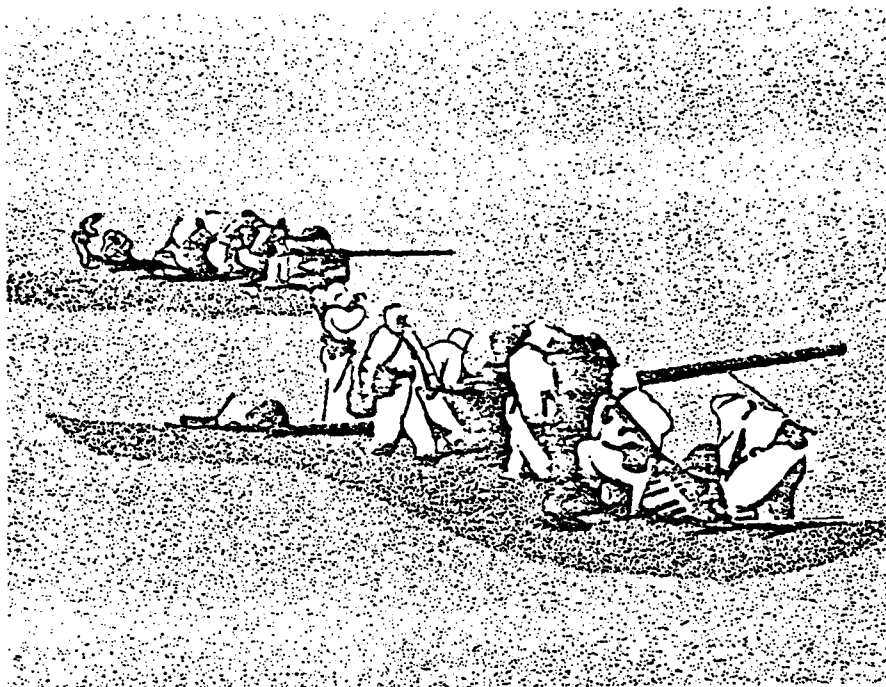


Source: Training Circular 6-4-2, 31 December 1976, p. E-8.

SOVIET ARTILLERY

T-12 AT Gun⁵⁰

Artillery Materiel

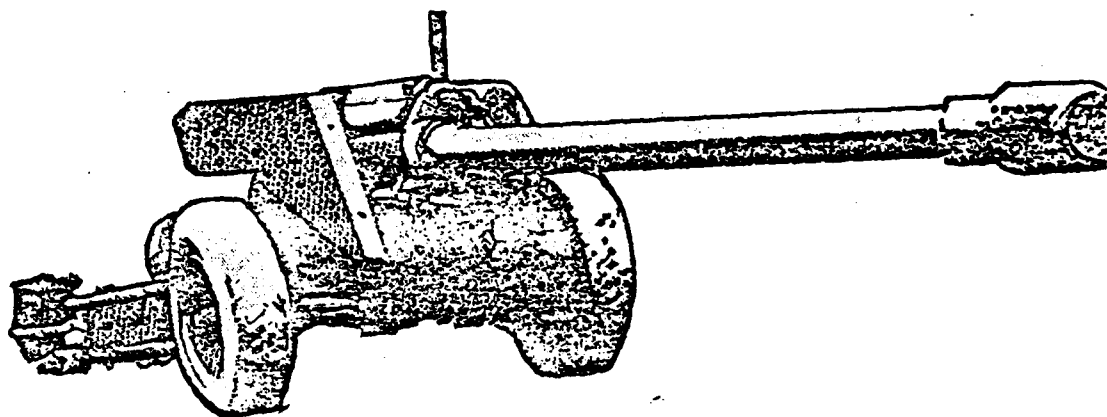
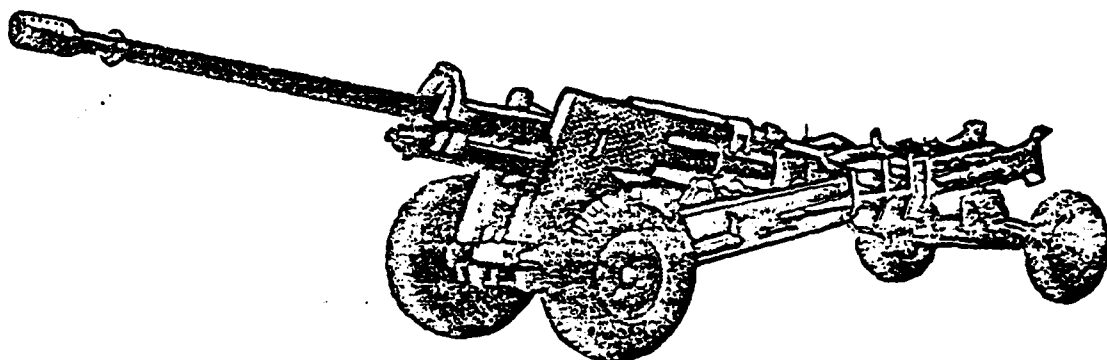


Total Weight	3,000 kg (7,400 lbs)
Projectile Weight	
APDS	5.5 kg (12 lbs)
HEAT	9.5 kg (21 lbs)
Max Range	8,500 m
Rate of Fire	10 rpm
Elevation	+20°
Depression	-10°
Traverse	27°
Crew	6 men

Source: Training Circular 6-4-2, 31 December 1976, p. B-3.

Artillery Materiel

130-mm Field Gun M-46 ⁵¹

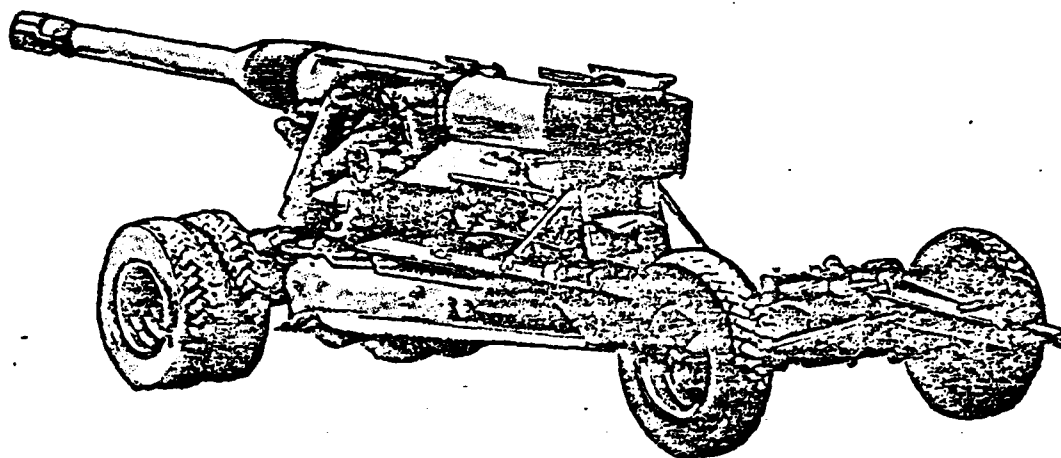


Total Weight	7,700 kg (17,000 lbs)
Projectile Weight	33.4 kg (73 lbs)
Max Range	27,000 m
Rate of Fire	5-6 rpm
Crew	9 men

Source: Training Circular 6-4-2, 31 December 1976, p. B-4.

180-mm Field Gun S-23⁵²

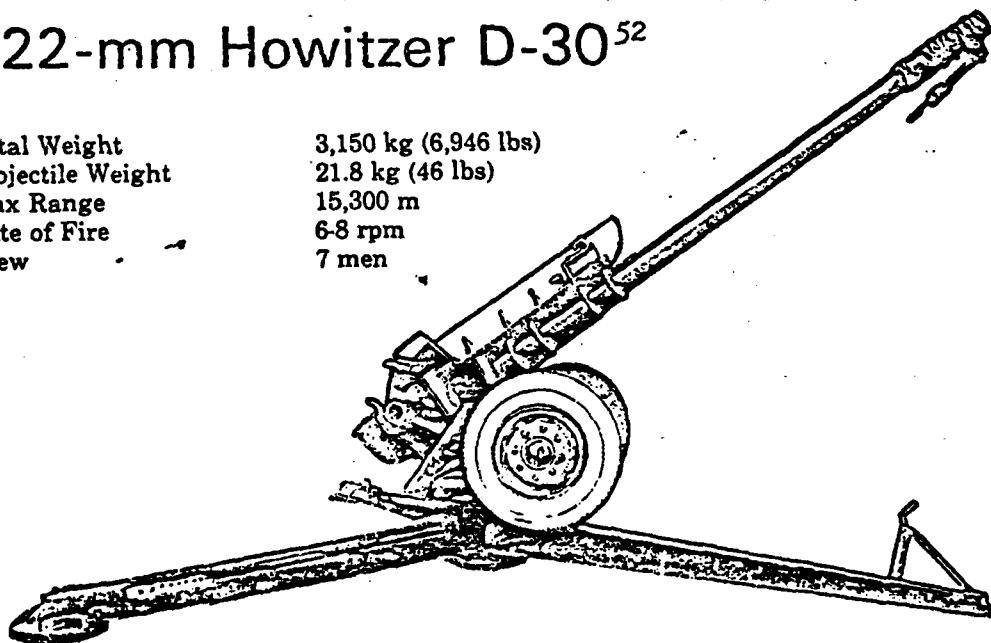
Annex Materiel



Total Weight	20,400 kg (44,974 lbs)
Projectile Weight	102 kg (225 lbs)
Maximum Range	30,000 m
Rate of Fire	1 rpm
Crew	15 (est)

122-mm Howitzer D-30⁵²

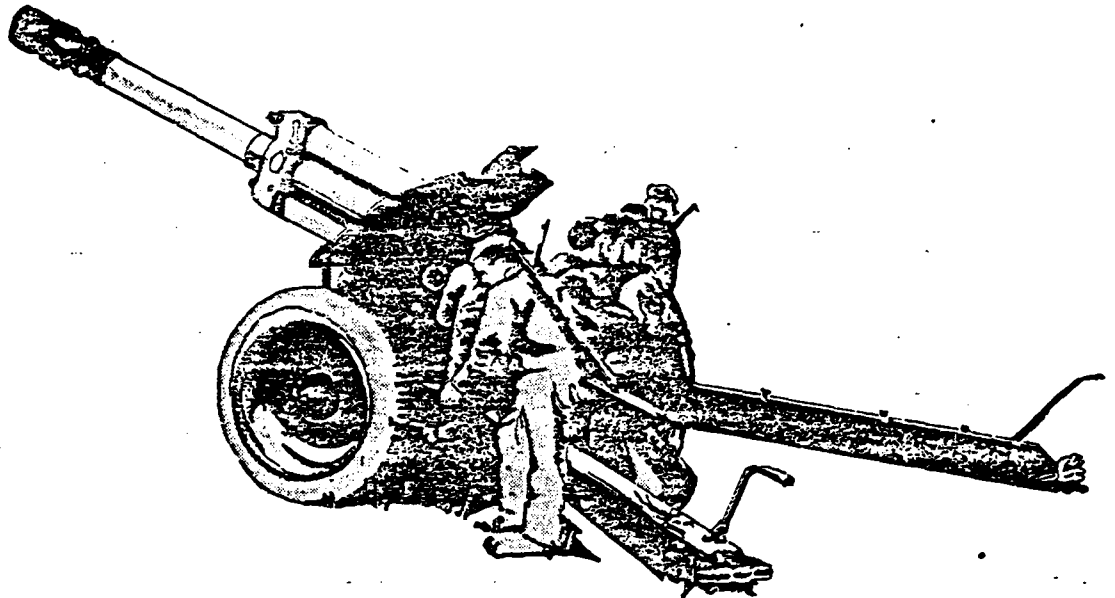
Total Weight	3,150 kg (6,946 lbs)
Projectile Weight	21.8 kg (46 lbs)
Max Range	15,300 m
Rate of Fire	6-8 rpm
Crew	7 men



Source: Training Circular 6-4-2, 31 December 1976, p. B-5.

Artillery Materiel

152-mm Howitzer M1943 (D-1)⁵³

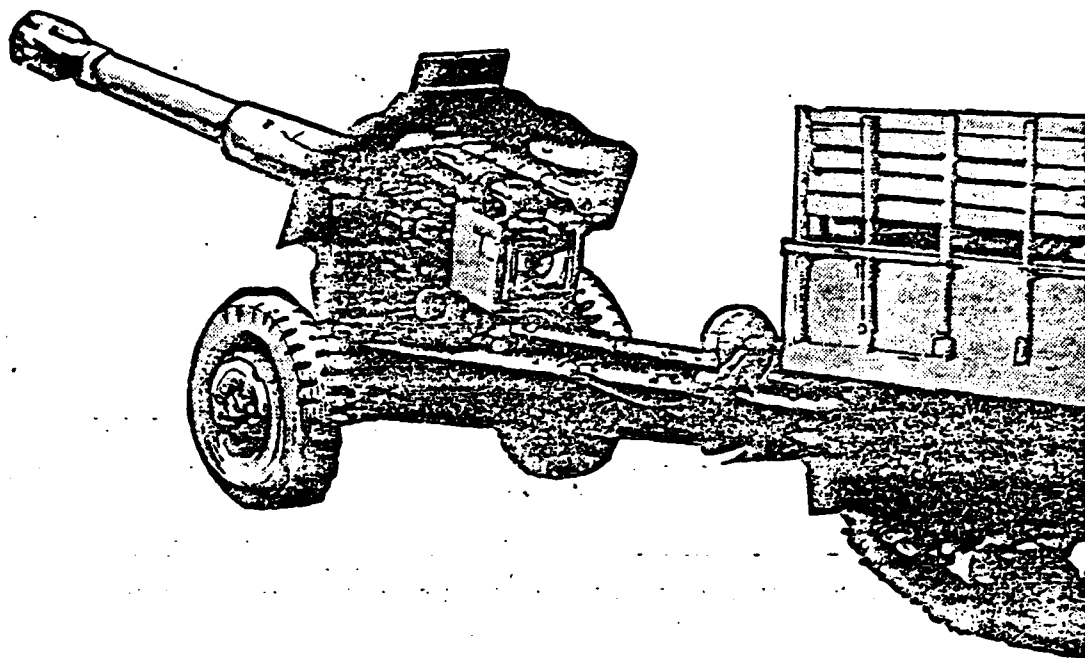


Total Weight	3,600 kg (7,920 lbs)
Projectile Weight	39.9 kg (88 lbs)
Max Range	12,400 m
Rate of fire	3-4 rpm
Crew	7 men

Source: Training Circular 6-4-2, 31 December 1976, p. B-6.

152-mm Gun—Howitzer D-20⁵⁴

Artillery Materiel

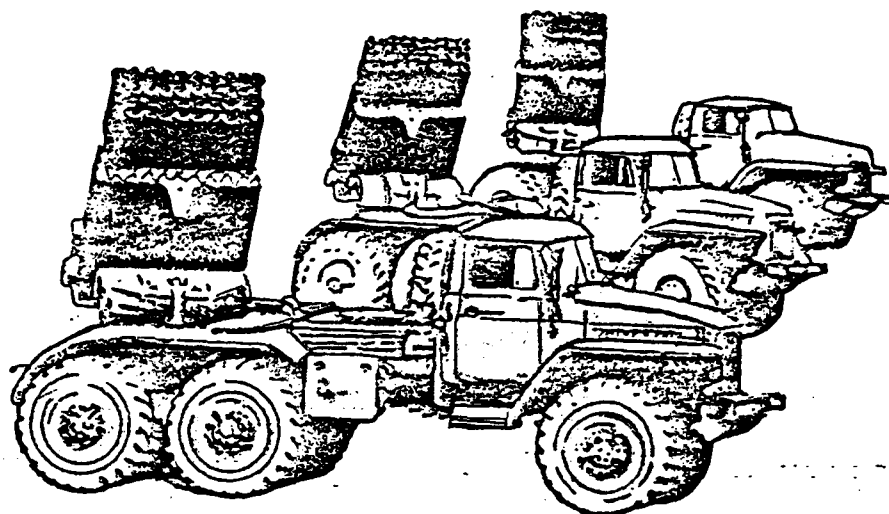


Total Weight	5,500 (12,125 lbs)
Projectile Weight	43.6 (96 lbs)
Maximum Range	17,300 m (est)
Rate of Fire	5 rpm
Crew	10

Source: Training Circular 6-4-2, 31 December 1976, p. B-7.

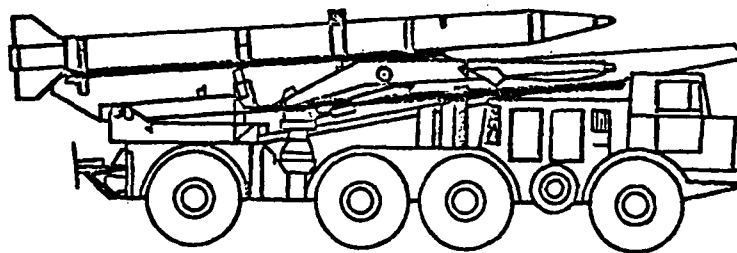
Artillery Materiel

BM-21 MRL⁵⁵



Total Weight	11,500 kg (29,300 lbs)
Projectile Weight	19 kg (42 lbs)
Max Range	20,500 m
Rate of Fire	40/10 min
Crew	6 men

FROG-7⁵⁵



Total Weight	20,000 kg (44,100 lbs)
Warhead Weight	540 kg (1,190 lbs)
Max Range	70,000 m
Min Range	11,000 m
Rate of Fire	1/20 min
Crew	4 men

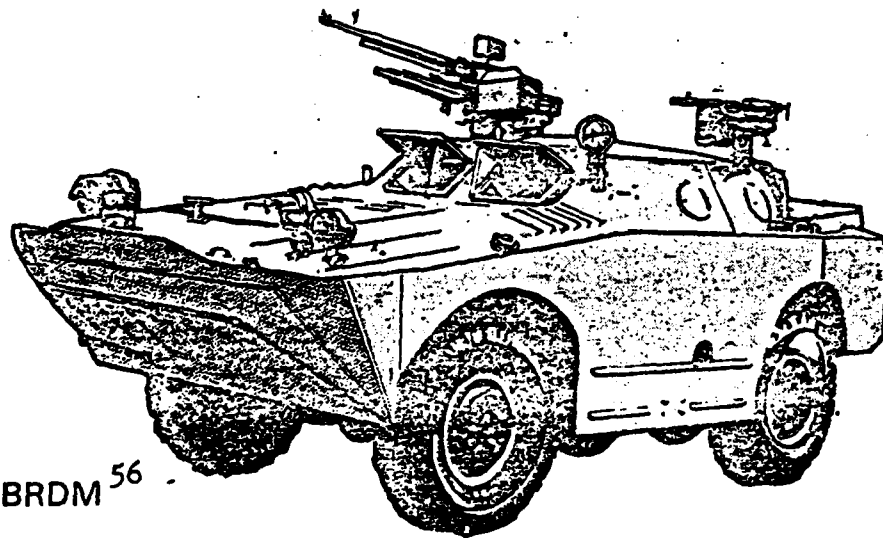
Source; Training Circular 6-4-2, 31 December 1976, p. B-8.

SOVIET COMBAT VEHICLES

Combat Vehicles

Combat Vehicles

BRDM
BRDM-2
AT-1 Snapper ATGM; AT-2 Swatter
ATGM
AT-3 Sagger ATGM
Amphibious Armored Personnel Carrier
BTR-60 PB
Amphibious Armored Infantry Combat
Vehicle BMP
Light Amphibious Tank PT-76
Medium Tank T-55
T-62 Main Battle Tank



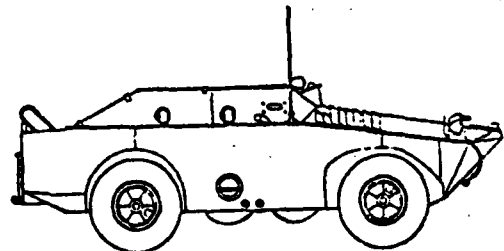
BRDM ⁵⁶

Vehicle

Combat Weight	5.6 tons
Speed Land/Water	80/9 kph
Cruising Range	500 km
Max Armor	10 mm
Crew	5 men

Armament

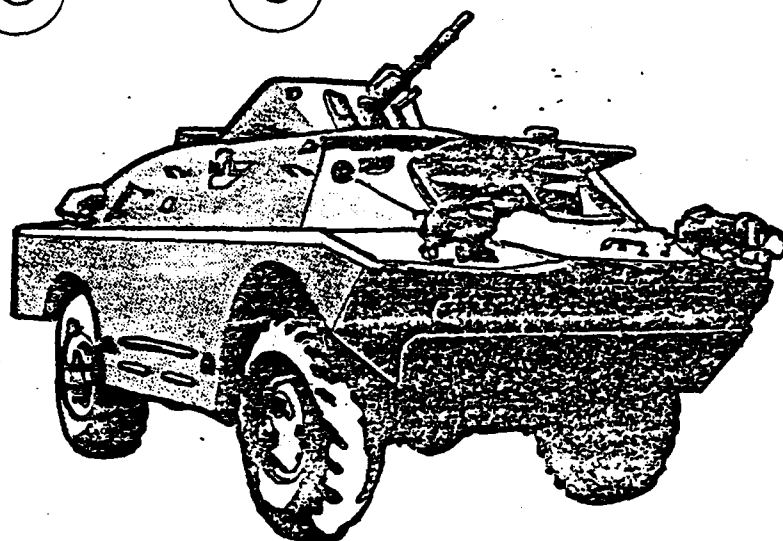
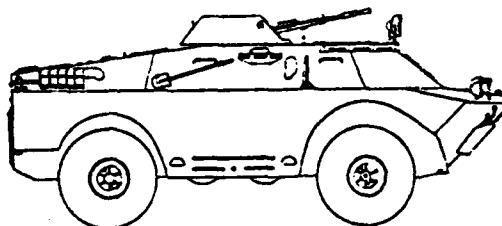
Main	7.62-mm MG
Basic load	1,250 rds
Secondary	-----
Basic load	-----



Source: Training Circular 6-4-2, 31 December 1976, p. C-1.

Combat Vehicles

BRDM-2 57



Vehicle

Combat Weight	7.0 tons
Speed Land/Water	100/10 kph
Cruising Range	750 km
Max Armor	10 mm
Crew	4 men

Armament

Main	14.5-mm MG
Basic load	500 rds
Secondary	7.62-mm MG
Basic load	2,000 rds

Source: Training Circular 6-4-2, 31 December 1976, p. C-2.

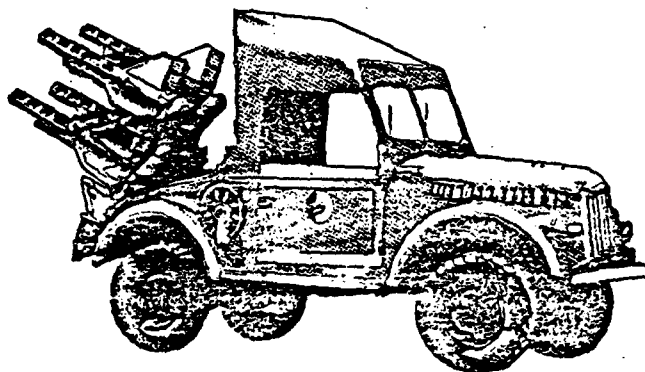
Vulnerabilities

Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

Can be penetrated by HE fragmentation; tires are extremely vulnerable to puncture.

AT-1 Snapper ATGM ⁵⁸

Combat Vehicles



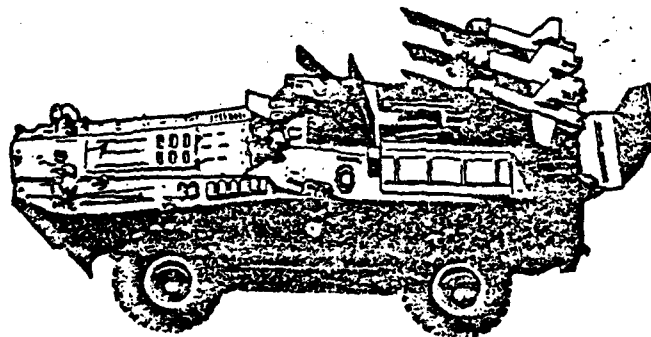
UAZ-69 Vehicle

AT-1 Missile

Combat Weight	2.1 tons	Length	114 cm
Speed Land	90 kph	Diameter	14 cm
Cruising Range	455 km	Weight	24 kg (53 lbs)
Crew	2 men	Range	2,000 m
		Armor Penetration	
		0°/any range	300+ mm

*BRDM with SNAPPER ATGM, see specification on BRDM.

AT-2 Swatter ATGM ⁵⁸



BRDM Launch Vehicle

AT-2 Missile

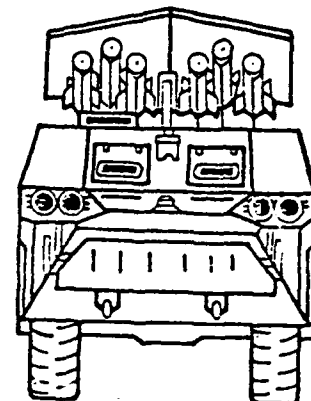
Combat Weight	5.6 tons	Length	114 cm
Speed Land/Water	80/9 kph	Diameter	13.2 cm
Cruising Range	500 km	Weight	20 kg (44 lbs)
Crew	2 men	Range	500-3,000+ m
		Armor Penetration	
		0°/any range	400+ mm

Source: Training Circular 6-4-2, 31 December 1976, p. C-3.

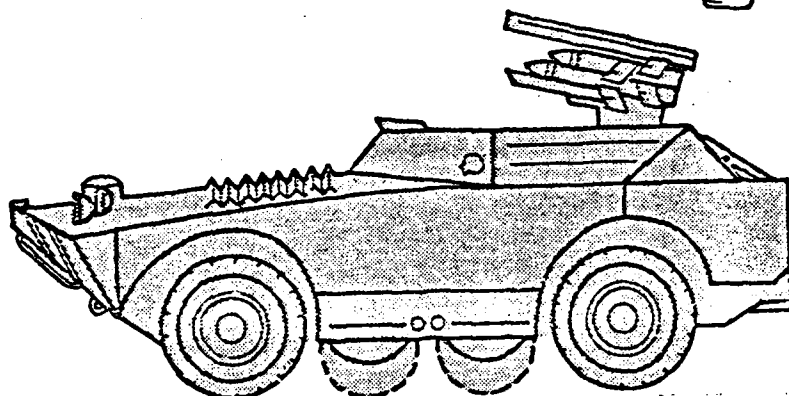
Combat Vehicles

AT-3 Sagger ATGM 59

Length	0.8 m
Weight	11 kg (24.90 lbs)
Max Range	3,000 m
Min Range	500 m
Crew	3 men
Armor Penetration	
0°/any range	400+ mm



AT-3 Sagger on BRDM 59



AT-3 Sagger (Manpack) 59



Vulnerabilities

Requirement for good visual contact during flight with both target and missile.

Missile travels at a very slow speed. If detected, evasive action is effective.

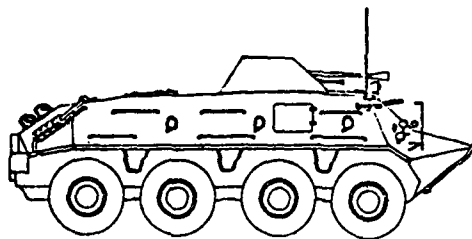
Minimum range limitations.

Missile leaves a highly visible signature when launched.

Source: Training Circular 6-4-2, 31 December 1976, p. C-4.

Amphibious Armored Personnel Carrier BTR-60 PB ⁶⁰

Combat Vehicles



Vehicle

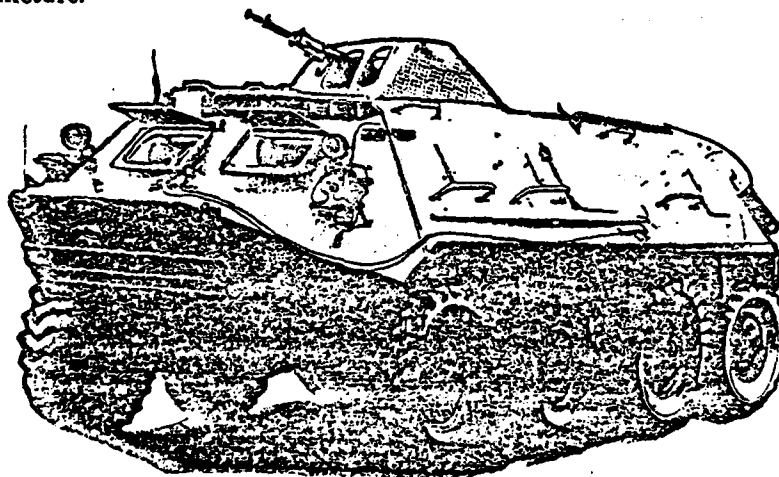
Combat Weight	11.3 tons
Speed Land/Water	80/10 kph
Cruising Range	500 km
Crew	2
Passengers	10

Vulnerabilities

Soft ancillary equipment (antennas and integral fuel tanks) and items such as treads and roadwheels are vulnerable to destruction by field artillery weapons.

Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

Can be penetrated by HE fragmentation; tires are extremely vulnerable to puncture.

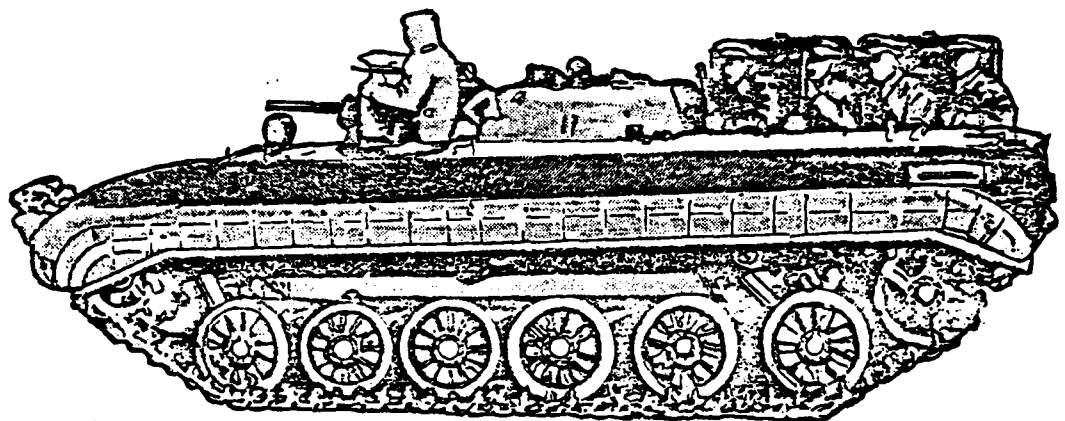
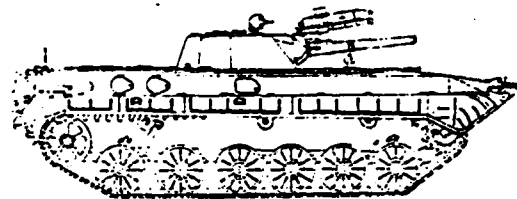


Armament

Main	14.5-mm mg
Basic load	500 rds
Secondary	7.62-mm mg
Basic load	2,000 rds

Source: Training Circular 6-4-2, 31 December 1976, p. C-5.

Amphibious Armored Infantry Combat Vehicle BMP⁶¹



Vehicle

Combat Weight	12.5 tons
Speed Land/Water	55/8 kph
Cruising Range	300 km
Crew	3
Passengers	8

Armament

Main	73-mm Smoothbore
Basic load	30+ rds
Secondary	7.62-mm mg
Basic load	1,000 rds
Supplemental	AT-3 Sagger
Basic load	4 rds

Vulnerabilities

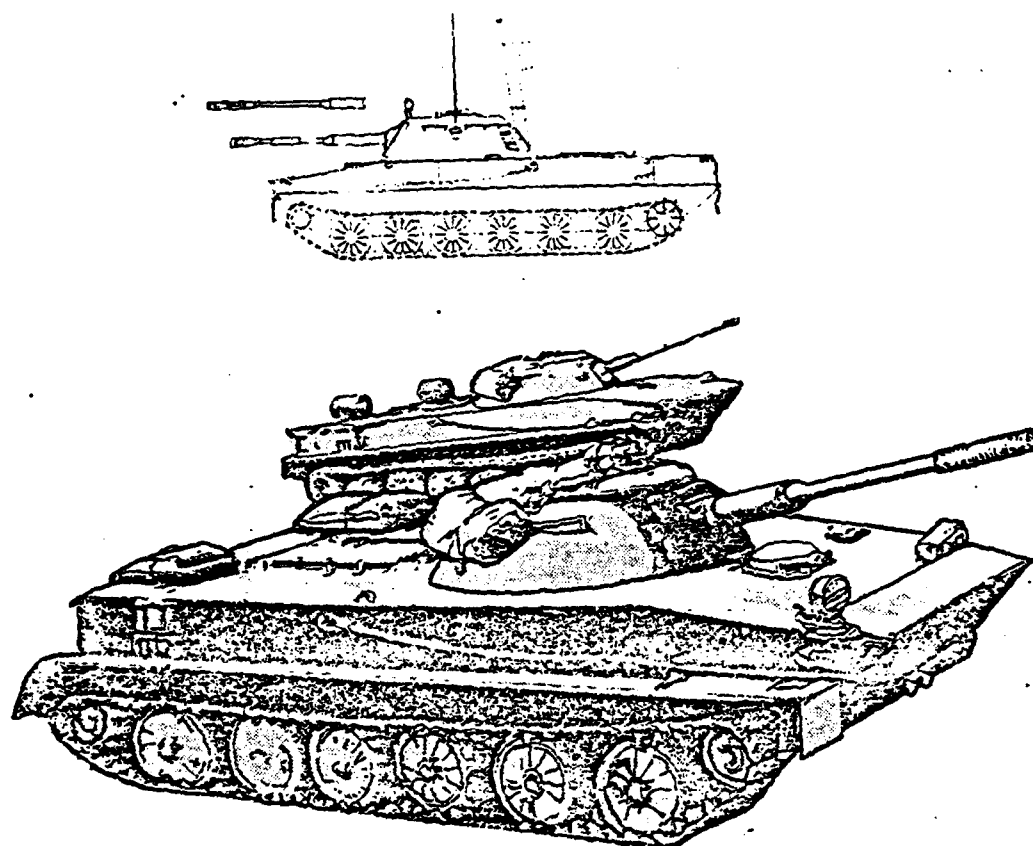
Soft ancillary equipment and items such as treads and roadwheels are vulnerable to destruction by field artillery weapons.

Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

Source: Training Circular 6-4-2, 31 December 1976, p. C-6.

Light Amphibious Tank PT-76 ⁶²

Combat Vehicles



Vehicle		Armament	
Combat Weight	14 tons	Main	76-mm gun
Speed Land/Water	44/10 kph	Basic load	40 rds
Cruising Range	260 km	Secondary	
Crew	3 men	Coaxial	7.62-mm mg
		Basic load	1,000 rds

Vulnerabilities

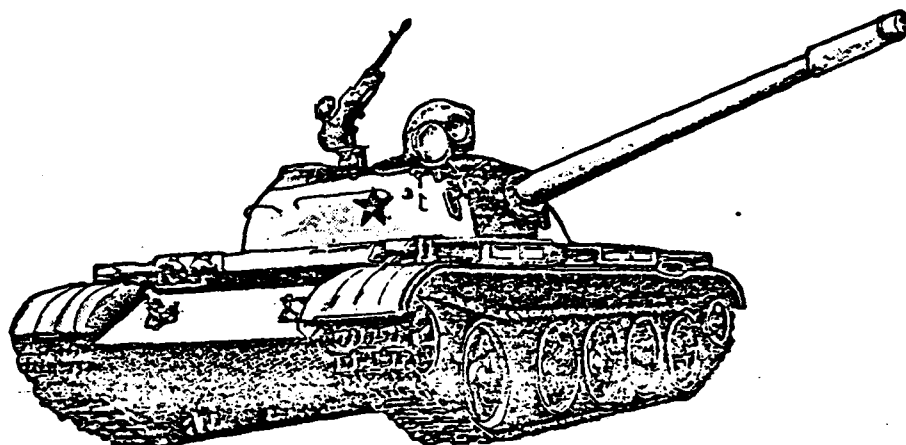
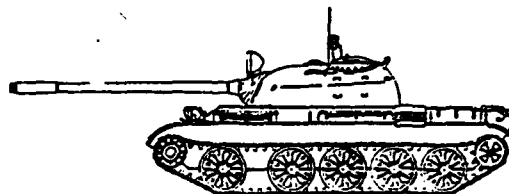
Ancillary equipment and items such as treads and roadwheels are vulnerable to destruction by field artillery weapons.

Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

It has a limited capability to depress its main gun; therefore, it cannot fire effectively from defilade and must expose itself to observation and fires.

Source: Training Circular 6-4-2, 31 December 1976, p. C-7.

Medium Tank T-55 63



Vehicle

Combat Weight	36 tons
Speed	50 kph
Cruising Range	500 km
Crew	4 men

Armament

Main	100-mm gun
Basic load	43 rds
Secondary	
Bow	7.62-mm mg
Coaxial	7.62-mm mg
AA	12.7-mm mg

Note: T-55 and subsequent models do not have bow mg.

Vulnerabilities

Soft ancillary equipment and items such as treads and roadwheels are vulnerable to destruction by field artillery weapons.

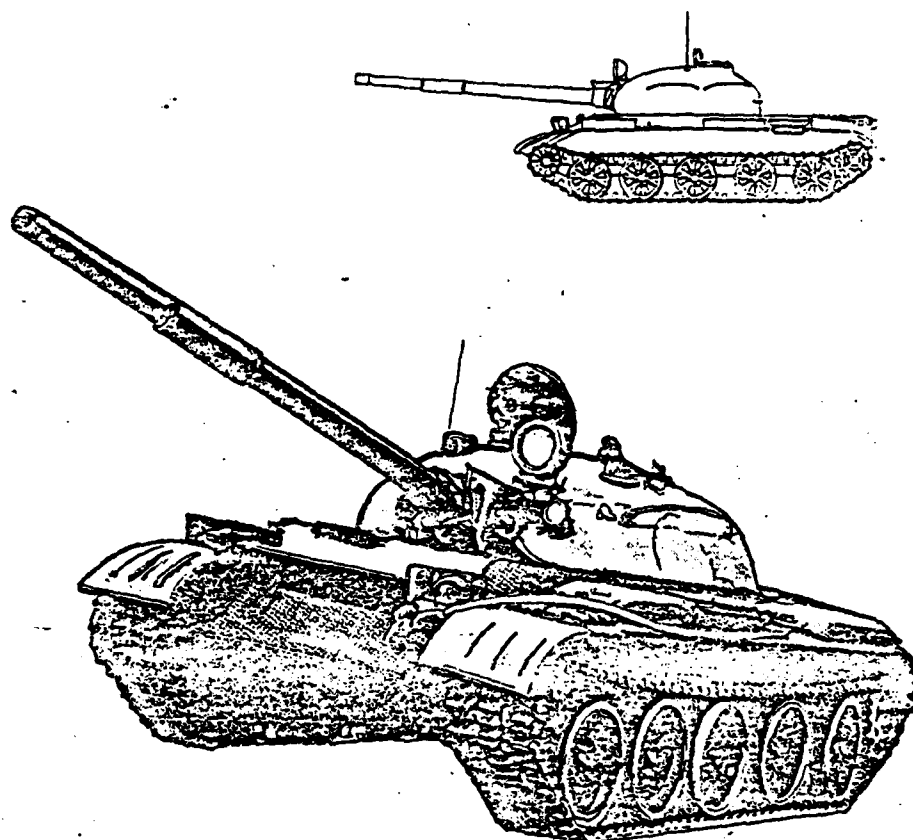
Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

It has a limited capability to depress its main gun; therefore, it cannot fire effectively from defilade and must expose itself to observation fires.

Source: Training Circular 6-4-2, 31 December 1976, p. C-8.

T-62 Main Battle Tank ⁶⁴

Combat Vehicles



<i>Vehicle</i>		<i>Armament</i>	
Combat Weight	36.5 tons	Main	115-mm gun
Speed	50 kph	Basic load	40 rds
Cruising Range	500 km	Secondary	
Crew	4 men	Coaxial	7.62-mm mg
		AA	12.7-mm mg

Vulnerabilities

Soft ancillary equipment and items such as treads and roadwheels are vulnerable to destruction by field artillery weapons.

Obscuration will significantly degrade fire, maneuver, and reconnaissance capability.

It has a limited capability to depress its main gun; therefore, it cannot fire effectively from defilade and must expose itself to observation and fires.

Source: Training Circular 6-4-2, 31 December 1976, p. C-9.

Notes

- 1 Training Circular 6-4-2, The Threat--Organization, Tactics and Equipment, Department of the Army, Washington, D.C., 31 December 1976, p. 5.
- 2 Field Manual 71-100, Armored and Mechanized Division Operations, Department of the Army, Washington, D.C., 30 March 1979, p. 2-1.
- 3 IAG-13-U-78, Soviet Army Operations, Department of the Army, Washington, D.C., April 1978, p. 1-7.
- 4 Ibid., p. 1-6.
- 5 Field Manual 71-100, p. 2-1.
- 6 Ibid., p. 2-1.
- 7 Soviet Army Operations, p. 1-7.
- 8 Field Manual 71-100, p. 2-3.
- 9 Ibid., p. 2-3.
- 10 Soviet Army Operations, p. 3-7.
- 11 Training Circular 6-4-2, p. 7.
- 12 Soviet Army Operations, p. 3-7.
- 13 Training Circular 6-4-2, p. 7.
- 14 Soviet Army Operations, p. 3-121.
- 15 Training Circular 6-4-2, p. 15.
- 16 DDB-2680-40-78, Handbook on the Soviet Armed Forces, Defense Intelligence Agency, Washington, D.C., February 1978, p. 8-15.
- 17 Training Circular 6-4-2, p. 16.
- 18 Ibid., p. 16.
- 19 Ibid., p. 18.
- 20 Handbook on the Soviet Armed Forces, p. 8-15.
- 21 Ibid., p. 8-13.
- 22 Ibid., p. 8-13.

Notes (Cont.)

- 24 Reference Book 3-1, NBC Operations, U.S. Army Command and General Staff College, Fort Leavenworth, KS, December 1978, p. 2-1.
- 25 Ibid., p. 2-4.
- 26 Ibid., p. 2-5.
- 27 Field Manual 71-100, p. 2-18.
- 28 Reference Book 100-33, Electronic Warfare Operations, U.S. Army Command and General Staff College, Fort Leavenworth, KS, August 1978, p. 2-1.
- 29 Field Manual 90-1, Employment of Army Aviation Units in a High Threat Environment, Department of the Army, Washington, D.C., 20 May 1977, p. 2-4.
- 30 Training Circular 6-4-6, p. 17.
- 31 Soviet Commanders Tactical Planning Worksheet, U.S. Army Command and General Staff College, Fort Leavenworth, KS, July 1979.
- 32 Handbook on the Soviet Armed Forces, p. 8-6.
- 33 Ibid., p. 8-7.
- 34 Ibid., p. 8-8.
- 35 Ibid., p. 8-9.
- 36 Ibid., p. 8-10.
- 37 Ibid., p. 8-11.
- 38 Ibid., p. 8-12.
- 39 NBC Operations, p. 2-6.
- 40 Ibid., p. 2-7.
- 41 Field Manual 71-100, p. 2-12.
- 42 Training Circular 6-4-6, p. E-1.
- 43 Ibid., p. E-2.
- 44 Ibid., p. E-3.
- 45 Ibid., p. E-4.

Notes (Cont.)

- 46 Training Circular 6-4-6, p. E-5.
- 47 Ibid., p. E-6.
- 48 Ibid., p. E-7.
- 49 Ibid., p. E-8.
- 50 Ibid., p. B-3.
- 51 Ibid., p. B-4.
- 52 Ibid., p. B-5.
- 53 Ibid., p. B-6.
- 54 Ibid., p. B-7.
- 55 Ibid., p. B-8.
- 56 Ibid., p. C-1.
- 57 Ibid., p. C-2.
- 58 Ibid., p. C-3.
- 59 Ibid., p. C-4.
- 60 Ibid., p. C-5.
- 61 Ibid., p. C-6.
- 62 Ibid., p. C-7.
- 63 Ibid., p. C-8.
- 64 Ibid., p. C-9.

CHAPTER 6

SOVIET AIR ASSAULT CAPABILITIES

Introduction

The Soviet Union, capitalizing on the realization that the helicopter played a dynamic role for the United States in Southeast Asia, and anticipating that the helicopter may influence future conventional battles, is now ready to employ the helicopter and heliborne forces on the modern battlefield in a variety of roles and missions.¹

The Soviets began experimenting with the helicopter to conduct troop and equipment transport operations in the early 1950's, about the same time the United States was exploring the use of the helicopter on the Korean battlefield. By the late 1950's the Soviet Union had developed the Mi-6 Hook, an excellent heavy lift helicopter. The Hook's lift capabilities increased the feasibility of employing heliborne forces on the conventional battlefield. The Hook can transport 65 combat loaded troops or, more significantly, heavy equipment like the ASU 85 Airborne Assault Gun. The Soviets were, therefore, interested in the possible employment of heliborne forces even prior to the 1960's.²

During the decade of the 60's and the US buildup in Vietnam, the Soviets interest in the foreign development of helicopter tactics and organizations was paralleled by an increased emphasis in the Soviet ground forces on helicopter

assault operations.³ During this period the Soviets began to view the helicopter as a potential asset for employment on the nuclear battlefield. Soviet writings reflected the idea that helicopter-borne forces could easily bypass areas of nuclear contamination and therefore assist in achieving the rapid rates of advance required in Soviet military doctrine.⁴ After 1965 the Soviet press began to show armed helicopters participating in combined operations with mechanized ground forces. The Soviets experimented with various armament packages for their existing helicopters through the 1960's. By the early 1970's the Soviets had begun production of the Mi-24 Hind, a helicopter specifically designed as an attack aircraft. This aircraft has the capability to be employed against armor, to provide general fire support for mech/armor maneuver forces, and to participate in helicopter assault operations.⁵

Soviet Trends

Soviet helicopter production was slowly developing in the 1950's, their first machines were considered to be of relatively poor quality. The current situation is quite different. The Soviet helicopter fleet has more than doubled in the last decade, they are producing high quality aircraft, and as a result, today they have a viable helicopter component in their armed forces.⁶ Soviet helicopter production is now estimated to be at 1,200 to 1,400 new aircraft per year.⁷ The Soviet Union appears to be heading toward an annual production rate of 1,600 helicopters. This would reflect a

rate of producing new helicopters twice as fast as they were during the 1976 and 1977 time period. In order to put the current Soviet commitment to expanding its helicopter force in perspective, the following US production commitment is interesting. The US Army has completed selection of two new helicopters to modernize the US force. The army plans to purchase 536 AH-64 advanced attack helicopters between 1982 and 1989, and 1,107 UH-60 utility helicopters before the end of the 1980's. By the early 1980's the Soviet Union will be producing more helicopters in a single year than the US Army will receive over the entire life span of the current AH-64 and UH-60 program contracts.⁸ The new Soviet aircraft are not lacking in quality either. The first Hind was spotted in the Soviet Union in 1974. At the current time there are at least five variants of this aircraft in existence, it appears that the Soviet Union has turned out a new improved version of its attack helicopter about once every 10 to 12 months. There is some speculation that the Hind D is equal to or possibly even better than the AH-64, which the US Army won't even begin to receive until 1982.⁹ The consensus of NATO military planners is that the heliborne forces of the Warsaw Pact possess a viable tactical punch that could well be tested on the central front.¹⁰

Airborne Assault Operations

The Soviets use the term "airborne assault" to refer to those operations that the US Army divides into two categories: airborne operations and air assault operations. Soviet

airborne assault operations are carried out to insert combat elements into an objective area by parachute assault, landing of combat support elements by fixed wing aircraft, and the landing of troops and equipment by helicopter. The Soviets view the airborne assault as an integral part of all large scale combined arms operations. They plan to utilize airborne assault operations in both conventional and nuclear warfare environments. Soviet military planners see these type operations as key elements of their overall scheme of maneuver. These highly mobile operations involve the employment of combat forces by air to seize and secure key objectives in enemy rear areas, forward of the advancing Soviet mechanized and armored forces. Airborne assault operations can, therefore, be utilized to further Soviet principles for the use of surprise, mobility, deep penetration, and rapid exploitation in order to maintain the momentum of offensive combat action. Helicopter assault operations carried out in support of a large combined arms operation can generally be divided into two categories:

1. Tactical Airborne Assault - These operations are carried out by units of up to battalion size. Tactical airborne assault units conduct heliborne assaults against objectives in the enemies forward areas. This type of operation is a routine component of combined arms maneuver. Missions which may be conducted by tactical airborne assault forces include the securing of bridgeheads, securing of airlanding sites, securing of river crossing sites, seizing key terrain objectives, leap-frogging contaminated areas to

exploit the results of nuclear or chemical strikes, encircling or flanking of enemy forces, and destroying nuclear delivery means.

2. Special Purpose Airborne Assaults - These operations are carried out by combat units of up to company size. These operations are also conducted as a routine part of combined arms maneuver. Special purpose assault units are organized as reconnaissance or raid forces. Missions which may be conducted by special purpose forces include target reconnaissance and intelligence collection activities, destruction of nuclear delivery means, destruction of command and control facilities, destruction of logistic activities, and harassment of enemy rear areas.¹²

As far as western intelligence agencies can determine at this time, the Soviets have developed no known organizations specifically designed to conduct helicopter assault operations. Instead of a US type air assault organization, the Soviets rely upon training regular motorized rifle battalions in helicopter assault tactics and techniques. The Soviets feel that any motorized rifle battalion can be converted to a lethal air assault force with just a minimum of training on helicopter operations. For specific assault operations the motorized rifle battalion may be augmented to meet specific mission requirements. Normal augmentation may include reconnaissance, engineer and anti-tank support elements.¹³ On the mechanized battlefield the helicopter assault force is normally employed as a subordinate element of a larger combined arms force

designated for a link-up operation. Helicopter assaults as far as 50 kilometers forward of the Soviet FEBA are advocated in order to maintain the desired offensive rates of advance. Unlike the US air assault force, the Soviet ground force which has been tasked to conduct heliborne operations must go to the helicopter regiments of the tactical air army to obtain required helicopter support. The currently available Soviet helicopters which we can expect would be employed in helicopter assault operations in Europe are indicated on the chart on the next page.¹⁴

During a typical Soviet air assault operation the helicopters will fly at altitudes of up to 50 or 100 meters. Flight routes will be carefully selected and terrain will be used to the maximum extent possible to mask their approach to the enemy. Within range capabilities, artillery preparatory fires will be used to suppress enemy air defenses along the intended flight path. These suppressive fires may be conventional, chemical or possibly even nuclear. Armed fighter aircraft or armed helicopters will be used to escort the heliborne force into the objective area. Upon landing the assault force, these escort aircraft are used in conjunction with available artillery to provide initial fire support for the ground attack. The Soviets will normally plan to use landing zones as near to their intended objectives as possible. Alternate landing zones will be routinely planned for and will be used any time that unexpectedly heavy resistance is encountered in primary landing zones.¹⁶

	HIP	HOOK	HIND-A	HIND-D
CREW SIZE	2	5	2	2
TROOP CAPACITY	28	65-70	8-12	8-12
RANGE (KM)	425	620	360	360
ARMAMENT	Can be equipped with rocket pods	None	One 12.7mm 4 ATGM's 4 rocket pods	Four 12.7mm 4 ATGM's 4 rocket pods

Figure 2 ¹⁵

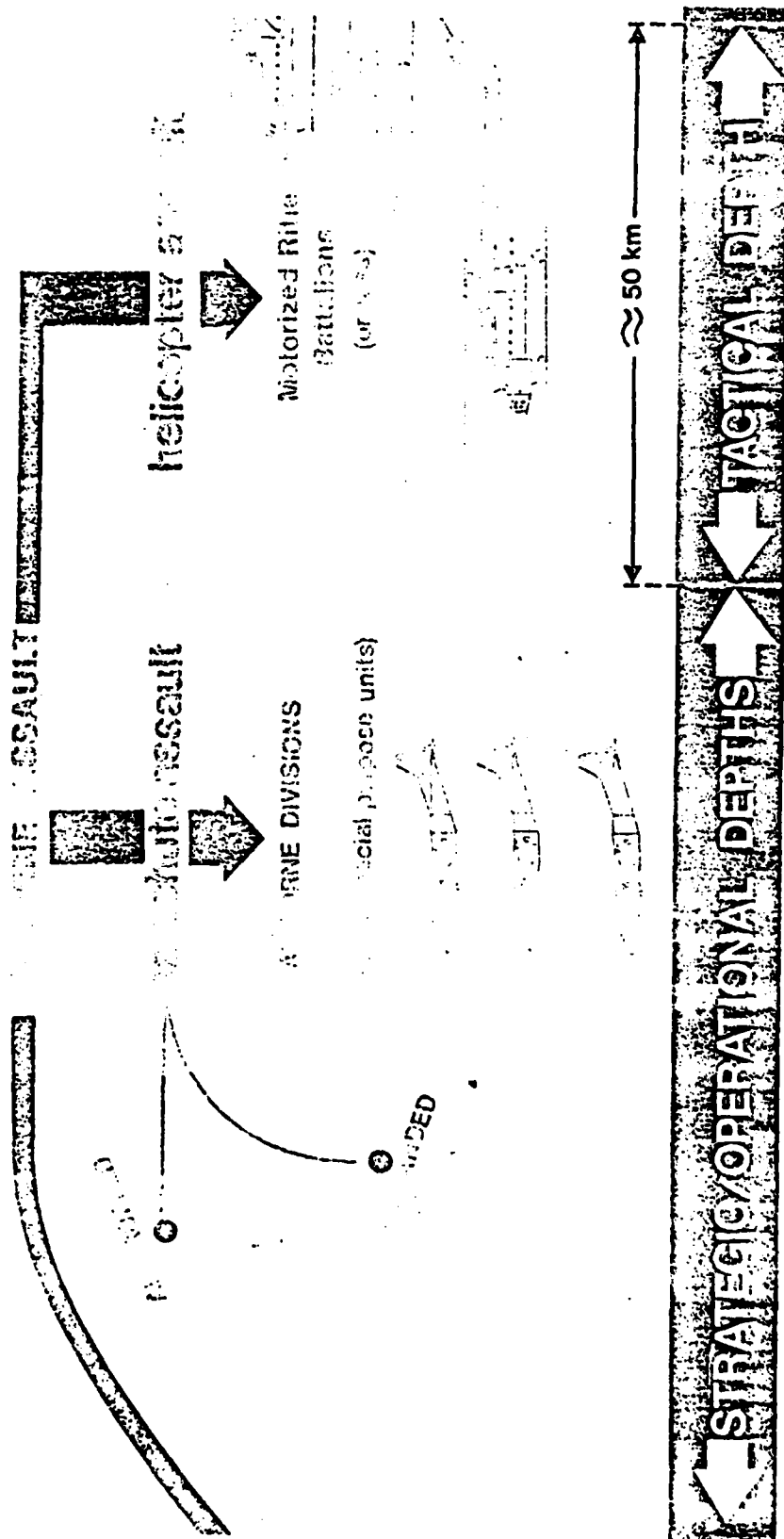
SOVIET HELICOPTER CHARACTERISTICS

Source: Soviet Army Operations, 11 August 1978, p. 7-2.

The Soviets will normally conduct their helicopter assaults in conjunction with an attacking combined arms force. For this reason, once a heliborne force has seized its objective, it will immediately establish defensive positions and will attempt to hold its position until link-up can be completed with the advancing ground forces. In order to defend their position the assault force will form company and platoon strongpoints. A great deal of emphasis will be given to anti-tank security and defenses. A motorized rifle battalion conducting helicopter assault operations is not capable of conducting independent operations for a very long period of time. Although there may be tactical situations which may require the motorized rifle battalion to operate independently for up to 24 hours, the Soviets normally plan to achieve link-up with advancing ground forces in just two to three hours.¹⁷

Summary

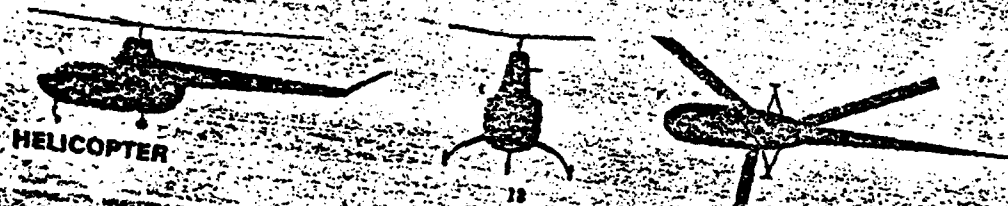
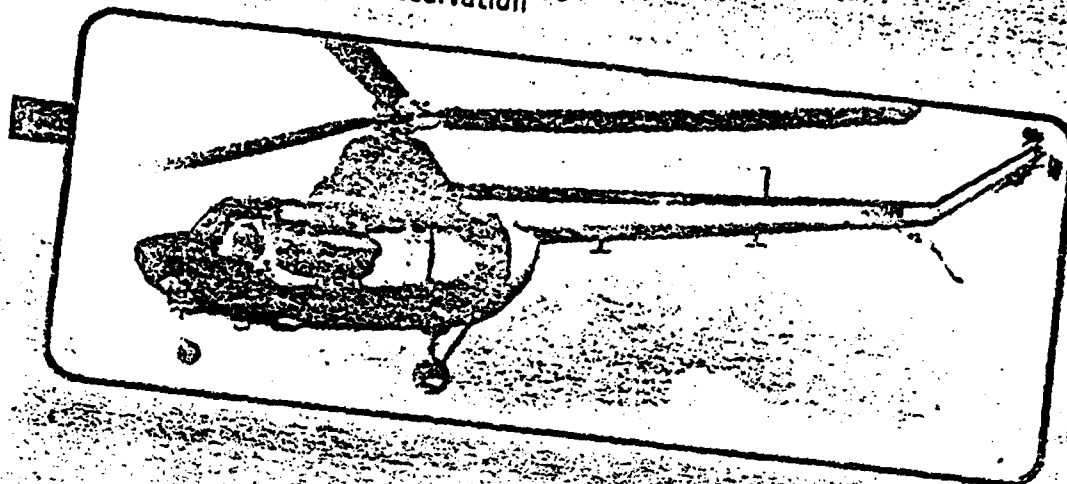
The Soviet Union has experimented with and developed helicopter tactics and techniques since the early 1950's. At some time since those early experiments Soviet military planners realized a potential to use heliborne forces and attack helicopters on the conventional and nuclear battlefield. As a result the Soviet Union has committed itself to expanding the size of its helicopter fleet while simultaneously improving overall quality through the introduction of new helicopter systems. At the present time the Soviet Union has developed the capability to employ a viable helicopter force on any future battlefield.



AIRBORNE ASSAULT

Source: Soviet Army Operations, 11 August 1978, p.7-2.

HARE (Mi-1) - Light Observation 18



RECOGNITION FEATURES: Single rotor; tricycle gear; and single radial engine.

ARMAMENT:

1 x 12.7mm machinegun
1 x 16-shot 57mm rocket pod or
2 x ATGMs

MAIN GUN RANGE:

12.7mm machinegun - 1,500 meters
57mm rockets - 1,500 meters
ATGM - 3,500 meters

SPEED:

170 km/hr

RANGE:

389 km

USERS:

Albania, Bulgaria, Cuba, Czechoslovakia, East Germany, Egypt,
Hungary, Iraq, North Korea, People's Republic of China, Poland,
Syria, USSR

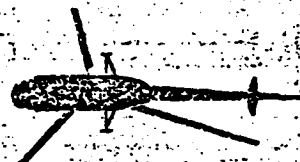
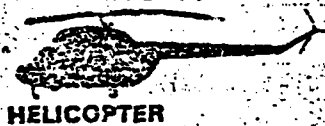
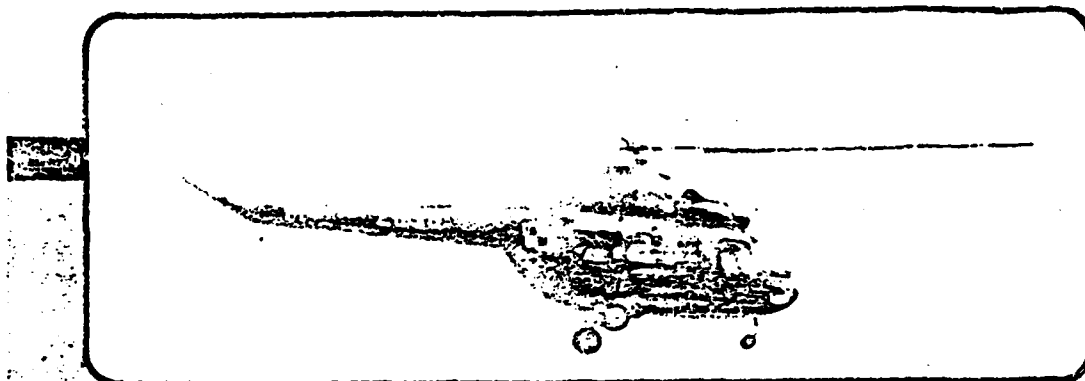
EMPLOYMENT:

General support of military with primary applications being liaison,
reconnaissance, and scouting

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 18-19.

HOPLITE (Mi-2) - Light Utility 19



RECOGNITION FEATURES: Single rotor; tricycle gear; twin turbine engines.

ARMAMENT:
 1 x 12.7mm machinegun
 2 x 16-shot 57mm rocket pods or
 4 x ATGMs

MAIN GUN RANGE:
 12.7mm machinegun - 1,500 meters
 57mm rocket - 1,500 meters
 ATGM - 3,000 meters

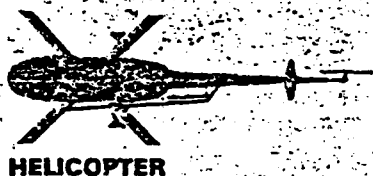
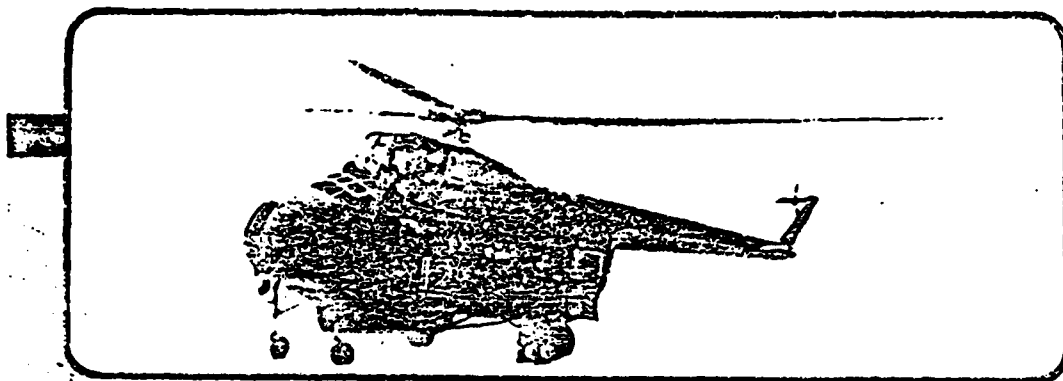
SPEED: 209 km/hr

RANGE: 306-675 km

USERS: Indonesia, Poland, USSR

EMPLOYMENT: General support of military units with primary applications of armed reconnaissance, liaison, and armed support

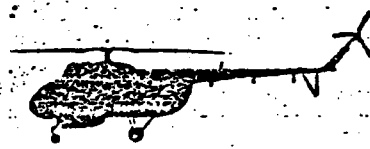
HOUD (Mi-4) - General Purpose ²⁰



HELICOPTER



24



RECOGNITION FEATURES: Single rotor; quadcycle gear; one 18-cylinder radial engine; clamshell rear doors; gun gondola under the forward portion of the fuselage.

ARMAMENT: 1 x 12.7mm machinegun
4 x 16-shot 57mm rocket pods or
4 x ATGMs

MAIN GUN RANGE: 12.7mm machinegun - 1,500 meters
57mm rockets - 1,500 meters
ATGM - 3,000 meters

SPEED: 213 km/hr

RANGE: 274-463 km

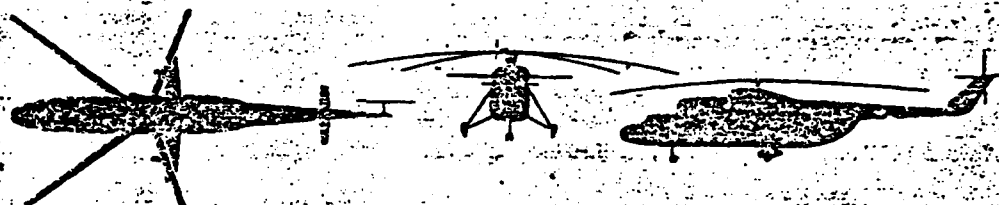
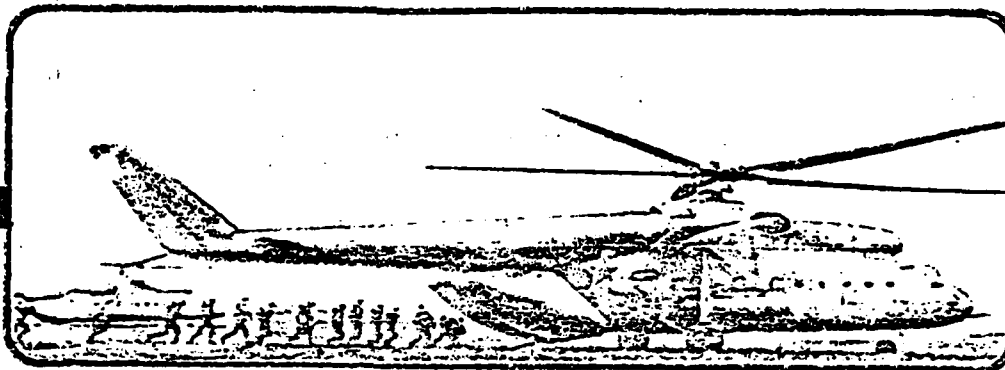
USERS: Albania, Algeria, Bulgaria, Cuba, Czechoslovakia, East Germany, Egypt, Finland, Hungary, India, Indonesia, Iran, Iraq, North Korea, People's Republic of China, Poland, Romania, Syria, USSR, Yugoslavia

25

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 24-25.

HOOK (Mi-6) - Heavy-Lift²¹



HELICOPTER

26

RECOGNITION FEATURES: Single rotor; twin turbine engines; stubby wings; tricycle gear; large rear clamshell doors.

ARMAMENT: 1 x 12.7mm machinegun

MAIN GUN RANGE: 1,500 meters

SPEED: 300 km/hr

RANGE: 204-612 km

USERS: Bulgaria, Egypt, Indonesia, North Korea, USSR

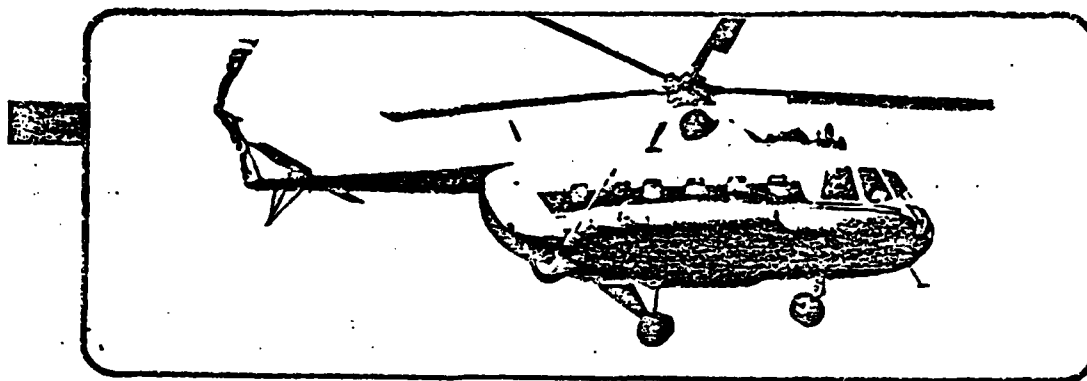
EMPLOYMENT: General support of military units with primary applications of troop (65) and cargo (heavy lift) transport

27

HELICOPTER.

Source: Training Circular 1-88, 29 March 1977, pp. 26-27.

HIP (Mi-8) - Medium Utility ²²



HELICOPTER

28

RECOGNITION FEATURES: Single rotor; twin turbine engines; tricycle gear; rear clamshell doors.

ARMAMENT: 4 or 5 x 7.62mm assault rifles
1 x 7.62mm machinegun
4 x 16-shot launchers for 57mm rockets
4 x 550 lb (250 kg) bombs
2 x 1,100 lb (500 kg) bombs

MAIN GUN RANGE: 7.62mm machinegun - 1,000 meters
57mm rockets - 1,500 meters

SPEED: 250 km/hr

RANGE: 163-406 km

USERS: Czechoslovakia, East Germany, Egypt, Finland, Hungary, India, Iraq, Peru, Poland, Sudan, Syria, USSR

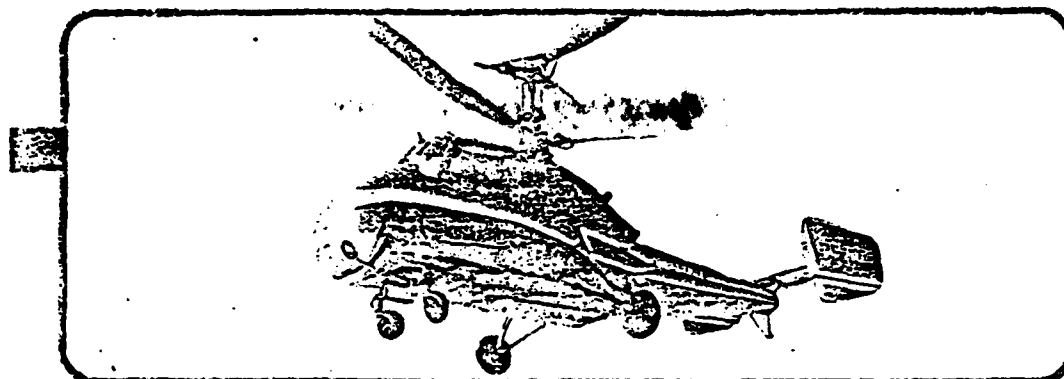
EMPLOYMENT: General support of military units with primary applications on troop assault, armed support, and general cargo transport

29

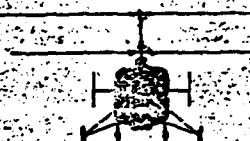
HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 28-29.

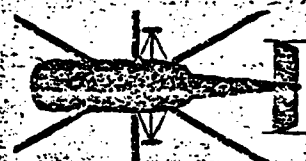
HOG (Ka-18) - Medium Range, Utility Transport²³



HELICOPTER



30



RECOGNITION FEATURES: Twin rotors on single shaft, one above the other; single reciprocating engine in back midsection; short box-like body; blunt nose, glassed-in cockpit, tapered rear; fixed four-wheel landing gear.

ARMAMENT: None

SPEED: 242 km/hr

RANGE: 740 km

USERS: USSR

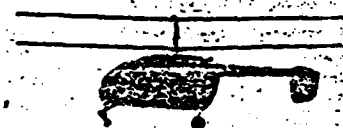
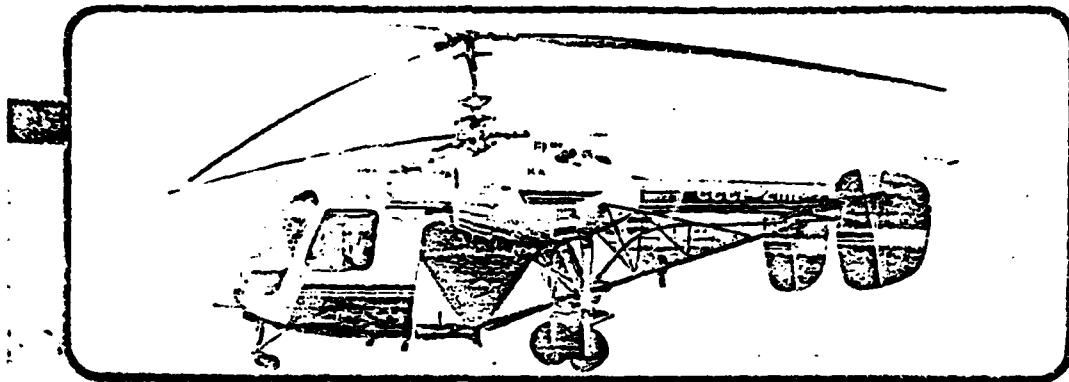
EMPLOYMENT: Medium range utility aircraft

31

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 30-31.

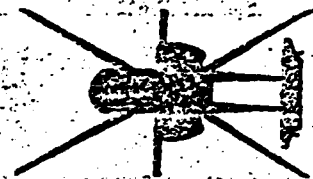
HOODLUM (Ka-26) - Light Cargo/Passenger/Ambulance 24



HELICOPTER



32



RECOGNITION FEATURES: Coaxial rotor system; twin radial engines; horizontal stabilizer with vertical fins; detachable pod.

ARMAMENT: None

SPEED: 167 km/hr

RANGE: 440-691 km

USERS: Bulgaria, East Germany, Hungary, Romania, Sweden, USSR

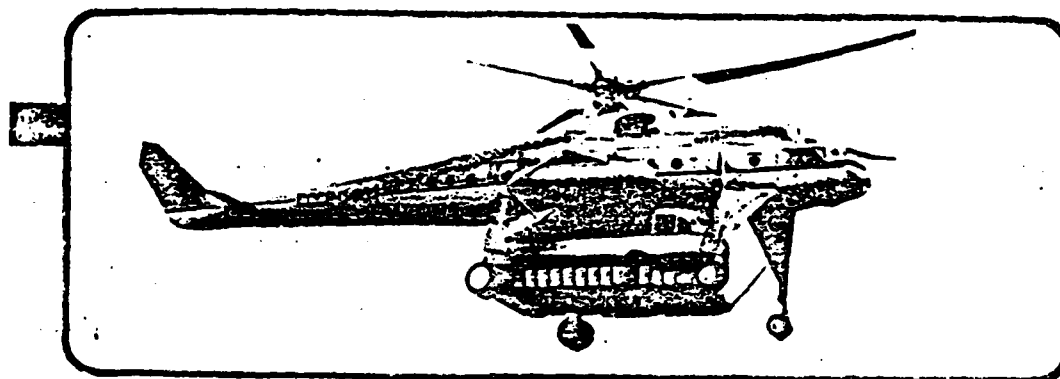
EMPLOYMENT: Detachable pod for medical evacuation or passengers; may be employed in anti-submarine warfare

33

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 32-33.

HARKE (Mi-10) - Heavy-Lift Crane ²⁵



HELICOPTER



34



RECOGNITION FEATURES: Single-rotor, twin-turbine engines, cargo troop cabin; quadcycle landing gear (Mi-10, extended landing gear) (Mi-10K, short gear with gondola under the cockpit).

ARMAMENT: None

SPEED: 220 km/hr

RANGE: 135-567 km

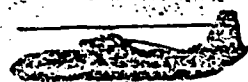
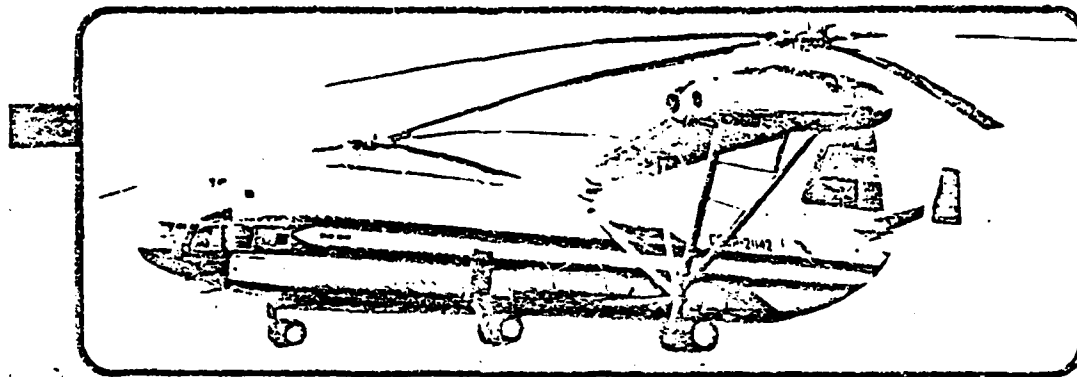
USERS: USSR

EMPLOYMENT: Primary application of external heavy-lift, platform-mounted equipment, plus a 28-troop capacity

Source: Training Circular 1-88, 29 March 1977, pp. 34-35.

HELICOPTER

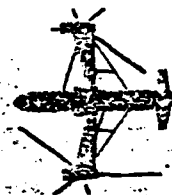
HOMER (Mi-12) - Heavy-Lift, Twin-Rotor 26



HELICOPTER



36



RECOGNITION FEATURES: Laterally displaced rotor system mounted at the end of inversely tapered truss support wings; four turbine engines; tricycle gear; large rear clamshell doors; large fixed-wing type fuselage.

ARMAMENT: None

SPEED: 260 km/hr

RANGE: 390 km

USERS: USSR

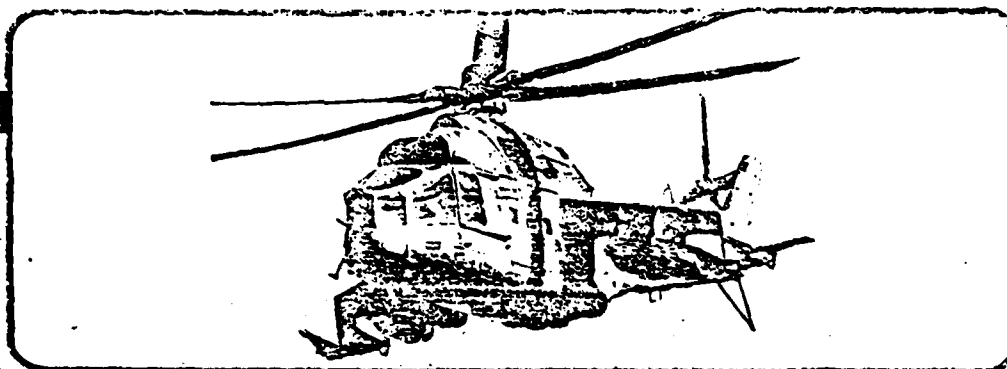
EMPLOYMENT: Military application, support of rear echelon logistical units carrying only internal loads or 200 troops

37

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 36-37.

HIIND-A (Mi-24) - Assault Helicopter/Gunship 27



HELICOPTER



20



RECOGNITION FEATURES: Similar in shape to the Mi-6 Hook, but smaller; short, stubby weapons-carrying wings, mounted at mid-fuselage; tricycle retractable loading gear; five-bladed main rotor, small chin turret.

ARMAMENT: 1 x 12mm machinegun
4 x 32-shot 57mm rocket pods
4 x AT missiles

MAIN GUN RANGE: 2,000 meters

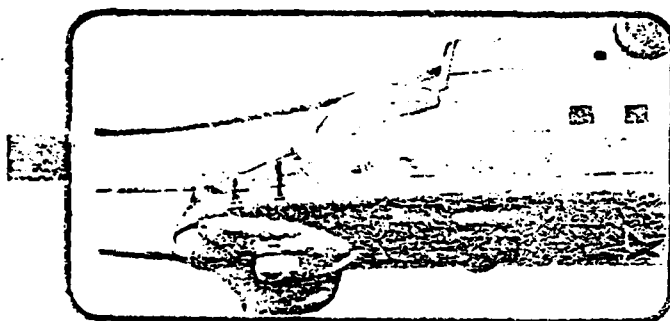
SPEED: 333 km/hr

RANGE: 491-537 km

USERS: USSR

EMPLOYMENT: Used in support of military units as a combat assault troop carrier and/or armed gunship

HIND D - Assault Helicopter/Gunship 28



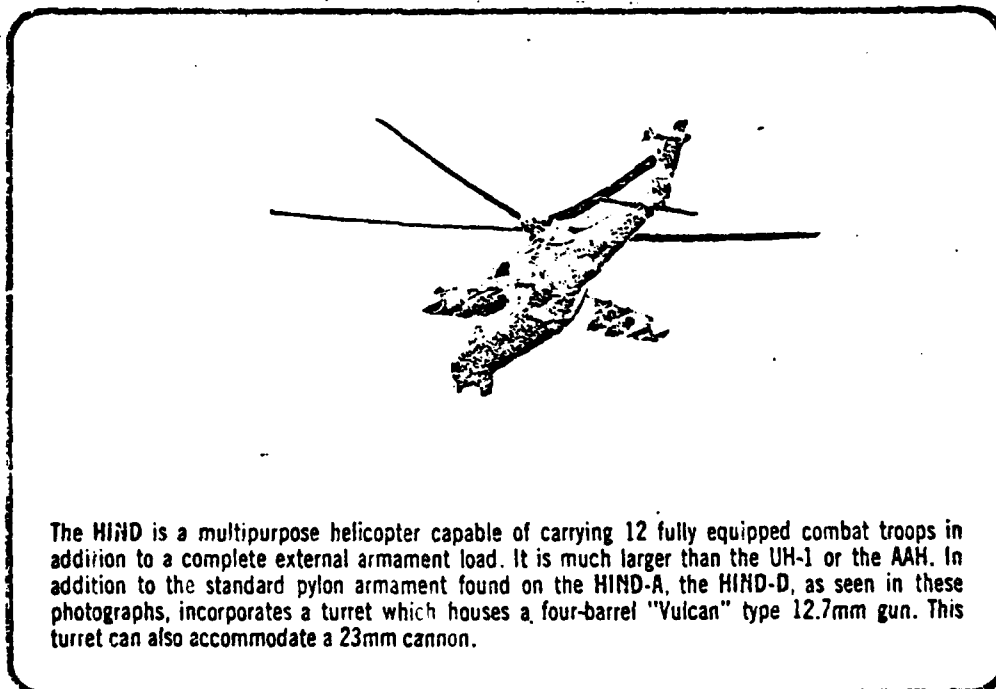
The distinguishing feature of the HIND-D is the nose modification which incorporates two tandem bubble canopies and a chin-mounted gun turret.

The HIND-D maintains the same troop-carrying and external weapons stores capability as the HIND-A. Each pylon has two 32-shot rocket pods and two launch rails for antitank guided missiles.



HELICOPTER

21.1



The HIND is a multipurpose helicopter capable of carrying 12 fully equipped combat troops in addition to a complete external armament load. It is much larger than the UH-1 or the AAH. In addition to the standard pylon armament found on the HIND-A, the HIND-D, as seen in these photographs, incorporates a turret which houses a four-barrel "Vulcan" type 12.7mm gun. This turret can also accommodate a 23mm cannon.

21.2

HELICOPTER

Source: Training Circular 1-88, 29 March 1977, pp. 21.1-21.2 .

Notes

- 1 John J. Metzler, "Helicopters in Soviet Forces," Military Review, Volume LIX, No. 10, October 1979, pp. 55 - 63.
- 2 Graham H. Turbiville, "A Soviet View of Heliborne Assault Operations," Military Review, Volume LV, No. 10, October 1975, p. 4.
- 3 Ibid., p. 3.
- 4 Ibid., p. 4.
- 5 Ibid., p. 5.
- 6 Metzler, "Helicopters in Soviet Forces," p. 55.
- 7 "Soviet Helicopter Fleet Expands Three-Fold," Armed Forces Journal International, June 1978, p. 13.
- 8 "Congress Concerned Over Soviet Helos," Armed Forces Journal International, January 1978, p. 8.
- 9 Ibid., p. 8.
- 10 Metzler, "Helicopters in Soviet Forces," pp. 55 - 63.
- 11 U.S. Army Intelligence and Threat Analysis Center, Soviet Army Operations, U.S. Army Intelligence and Security Command, U.S. Army, Washington, D.C., 11 August 1978, p. 7-2.
- 12 Ibid., pp. 7-1 - 7-8.
- 13 Ibid., pp. 7-1 - 7-8.
- 14 Ibid., p. 7-7.
- 15 Ibid., p. 7-7.
- 16 Ibid., p. 7-8.
- 17 Ibid., p. 7-8.
- 18 Training Circular 1-88, Aviator's Recognition Manual, US Department of the Army, Washington, D.C., 29 March 1977, pp. 18 - 19.
- 19 Ibid., pp. 22 - 23.
- 20 Ibid., pp. 24 - 25.
- 21 Ibid., pp. 26 - 27.
- 22 Training Circular 1-88, pp. 28 - 29.

Notes (Cont.)

- 23 Training Circular 1-88, pp. 30 - 31.
- 24 Ibid., pp. 32 - 33.
- 25 Ibid., pp. 34 - 35.
- 26 Ibid., pp. 36 - 37.
- 27 Ibid., pp. 20 - 21.
- 28 Ibid., pp. 21.1 - 21.2.

CHAPTER 7

AIR ASSAULT DIVISION OPERATIONS IN EUROPE

Introduction

In December 1979 the final approved draft of FM 71-101, Infantry, Airborne and Air Assault Division Operations, was published and distributed. The publication of this field manual ended a longstanding void in approved army doctrine for employment of air assault forces of up to division size. This doctrine will provide the basis for investigation of possible roles for the division in the European theater. In order to facilitate discussion of the potential range of missions which may be assigned to the air assault division, this chapter will initially present a summary of the doctrinal guidance provided in FM 71-101. From this base of understanding, I will attempt to identify voids or shortcomings in our new doctrine which should be addressed to fully utilize the capabilities of the air assault division. Finally, this chapter will present a discussion of various employment possibilities for the division which might be considered to fill the voids in current doctrine.

Current Doctrine for Employment of the Air Assault Division

General - FM 71-101 lays the groundwork for discussion of tactical employment of the division with the following:

The division conducts air assault operations by transporting infantry and field artillery battalions with necessary combat support and combat service support into battle by helicopter. Once deployed on the ground, air assault infantry battalions fight like those of the infantry division; however, normal task organization of organic aviation permits rapid aerial redeployment. This is the essence of air assault tactics--rapid tempo of operations over extended ranges.¹

Current doctrine recognizes that the air assault division does not possess the firepower, staying ability and protection of armored and mechanized divisions. For this reason the division is best employed in the restrictive terrain common to mountains, urban areas, jungles/forests and the arctic. Doctrinally the air assault division may operate independently or as an element of a corps. In the European environment the division would normally be assigned to a corps.²

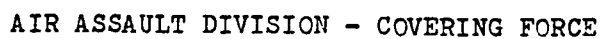
Offensive Operations - FM 71-101 discusses air assault division employment for the following offensive operations: Movement to contact, hasty attack, deliberate attack, exploitation and pursuit. Each of these operations will be discussed individually below:

1. Movement to Contact: In a corps, movement to contact the air assault division is capable of conducting covering force, flank and rear guard operations. Figure 7-1 depicts the air assault division as a covering force in a corps movement to contact. Figure 7-2 reflects the employment of

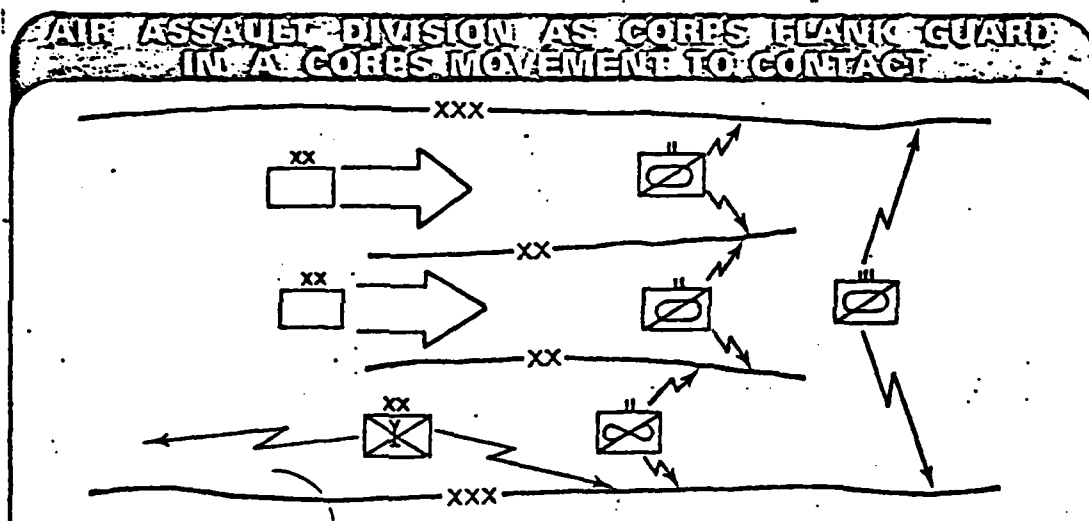
the air assault division as a corps flank guard and Figure 7-3 depicts rear guard employment in a corps movement to contact.³

a. Covering Force. Generally, the division's air cavalry squadron is used to overfly rough terrain, locate the enemy and develop the situation. Attack helicopter units can reinforce the cavalry or stand by to be called in to assist in the early development of the situation. The air assault brigades will be deployed to the rear of the cavalry. Brigades will be positioned and repositioned as necessary to insure the uninterrupted movement of the corps main body. During the movement to contact, the air cavalry squadron conducts reconnaissance while the air assault battalions are either located in brigade assembly areas or are displaced to forward assembly areas to reduce reaction/commitment times. When the air cavalry and attack helicopters have located the enemy and begun to develop the situation, the air assault battalions are committed to engage and destroy the enemy force. The division normally conducts covering force operations with the cavalry under division control. The division may, however, conduct the operation by allowing the brigades, with operational control of cavalry elements, to conduct the covering force mission while the division minus moves behind the leading brigades. The latter is the situation depicted in Figure 7-1.⁴

b. Flank and Rear Guard. The division can be employed to protect the corps main body from ground observation, direct fire and surprise attack through flank or rear



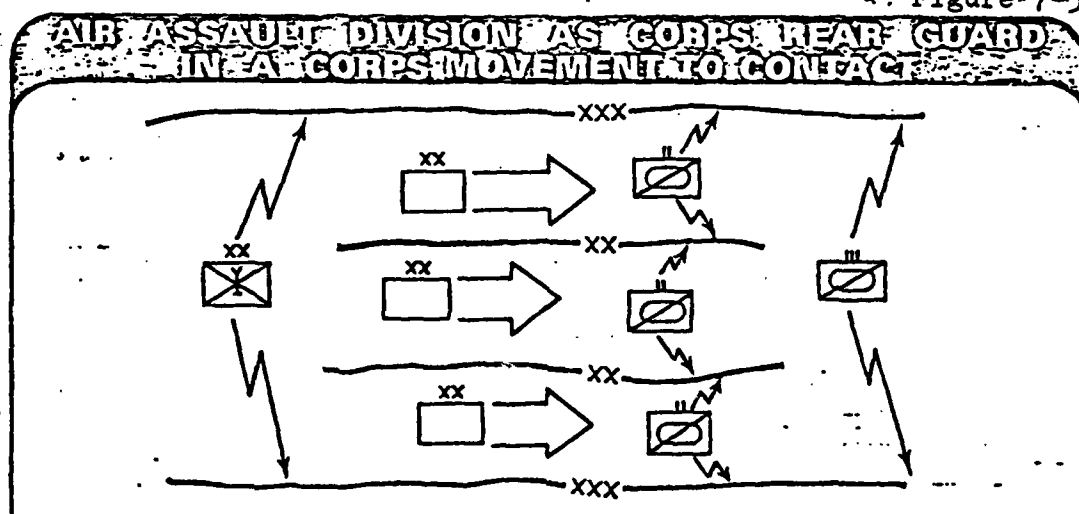
Source: FM 71-101 (Draft), 5 December 1979, p. 8-9.



AIR ASSAULT DIVISION - FLANK GUARD

28
Figure 7-2

Source: FM 71-101 (Draft), 5 December 1979, p. 8-9.



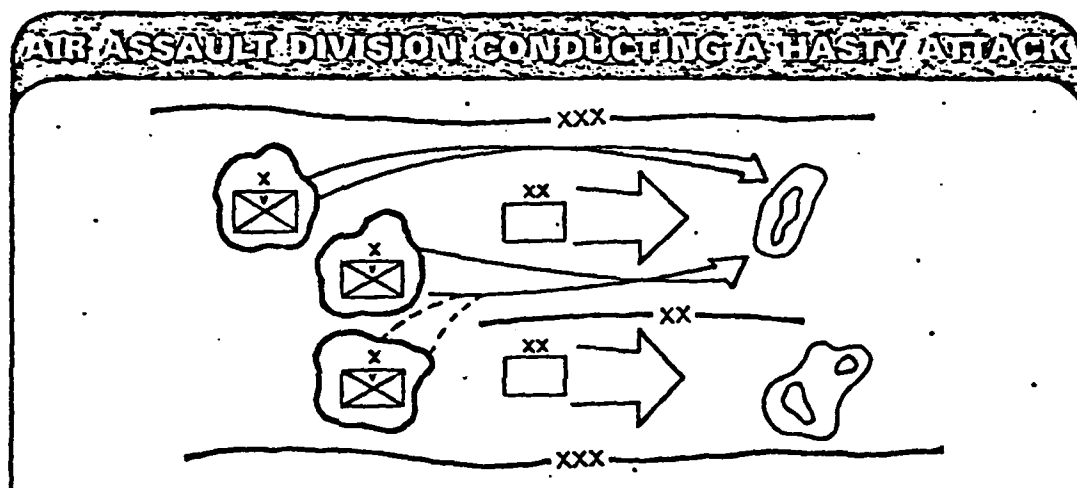
AIR ASSAULT DIVISION - REAR GUARD

Source: FM 71-101 (Draft), 5 December 1979, p. 8-10.

guard operations. When employed as a guard force, the division can capitalize upon its mobility and has sufficient combat power to locate and defeat enemy reconnaissance elements. The division can also delay an attack by the enemy until the corps main body can be deployed to counter the enemy attack. Figure 7-2 depicts flank guard operations. When operating as a rear guard, the division follows the main body, occupying successive positions. Movement is normally controlled by use of phase lines designated by the corps commander. Figure 7-3 depicts rear guard operations.⁵

2. Hasty Attack: FM 71-101 points out that the great strength of the air assault division is its ability to rapidly concentrate combat power. In the hasty attack, the division lands to the rear or flanks of the enemy force and assaults his position from a single direction or from multiple directions simultaneously. Figure 7-4 reflects an air assault division conducting a hasty attack as part of a corps operation. The doctrine emphasizes employment and integration of all combined arms elements of the division and places significant emphasis on the suppression of enemy air defenses (SEAD).⁶

3. Deliberate Attack: Current doctrine recognizes the fact that the air assault division is not capable of conducting deliberate attacks in an armored or mechanized combat environment. Two possible missions are suggested, however, for utilization of the division as part of a corps deliberate attack. The division can conduct economy of force



AIR ASSAULT DIVISION - HASTY ATTACK

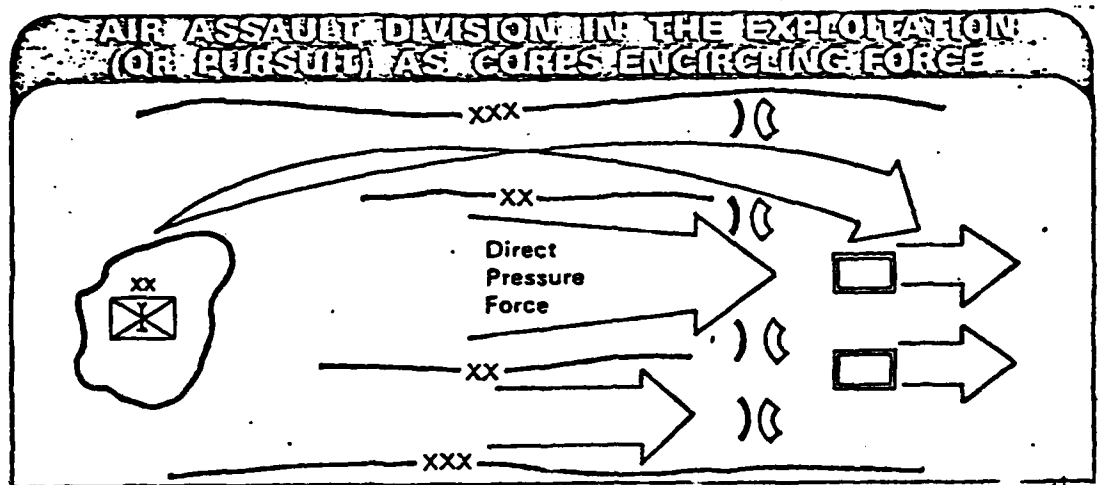
30
Figure 7-4

Source: FM 71-101 (Draft), 5 December 1979, p. 8-10.

operations or can seize key terrain forward of the line of contact for subsequent link-up with mechanized elements.⁷

4. Exploitation: The division's capability to rapidly bypass resistance and strike deep into the enemy rear makes it an ideal force to participate in exploitation operations. In the exploitation, air assault objectives are chosen in the enemy rear to facilitate the destruction of his defensive capability. The most suitable targets for air assault operations include command and control facilities, logistic facilities and combat service support elements. The assaulting force used in the exploitation can vary in size depending on the objective chosen, but may include use of forces of up to division size. If enemy air defense capabilities preclude the use of air assault forces in his rear areas, the division can still play a valuable role in the corps exploitation. The division can be employed in a follow and support role, thus freeing armored and mechanized units to conduct the exploitation. Figure 7-5 shows how an air assault division might be employed in the exploitation.⁸

5. Pursuit: The division is also ideally suited to conduct pursuit operations. The division can participate in a corps pursuit operation in any of the three major roles: direct pressure force, encircling force or follow and support force. The division's inherent mobility can be best exploited when the division is used as the encircling force. The division's mobility allows it to repeatedly attack the withdrawing enemy from the flanks. Air assault elements can



AIR ASSAULT DIVISION - EXPLOITATION

Figure 7-5

Source: FM 71-101, 5 December 1979, p. 8-11.

also establish blocking positions on withdrawal routes to trap the enemy between the advancing direct pressure force and the encircling element.⁹

Defensive Operations - FM 71-101 discusses the employment of the air assault division in defensive operations against both the infantry-heavy threat and against the mechanized/armor threat. Since the predominant threat on the European battlefield is mechanized/armor, that is the portion of the doctrine that is summarized in this section. Defensive doctrine recognizes that air assault units are not well suited to defend against mechanized/armor forces on terrain favorable to mounted operations. The division can effectively operate in the restrictive terrain of built-up areas, forests and mountains. As part of a corps that is conducting defensive operations on the mechanized/armor battlefield, the air assault division can be employed to:¹⁰

- Conduct main battle area operations in restrictive terrain.

- Conduct economy of force or reserve missions.

- Conduct rear area operations.

- Conduct flank security operations.

- Conduct limited-objective attacks.

- Conduct raids.

- Delay the enemy or conduct withdrawal operations.

- Seize cross FEBA objectives for linkup operations.

1. Covering Force Area (CFA): The air assault division is not well suited for covering force operations against mounted forces. Corps covering force operations may,

however, include utilization of the division's air cavalry squadron and attack helicopter battalion. These elements are particularly well suited for covering force operations when used in conjunction with mechanized/armor units.¹¹

2. Main Battle Area (MBA): Doctrine again points out that the division is not well suited for defensive operations against mechanized/armor elements in the MBA. If the MBA includes restrictive terrain, the air assault division should be used in that area.¹²

3. Economy of Force: The air assault division can be used in an economy of force role along avenues of approach through restrictive terrain or other unlikely avenues for enemy armor elements. This will free friendly mechanized/armor units for concentration at critical places on the battlefield. For this type mission, the division deploys units in depth along avenues of approach throughout the sector. The air cavalry squadron screens those areas that are not likely to be used as enemy avenues of approach. The division continually repositions its combat elements as necessary to counter the enemy attack. As the enemy advances, he is engaged at maximum ranges. Air assault forces are repositioned in depth prior to decisive engagement with the enemy force. This procedure is repeated until the enemy advance is halted or until other friendly forces can be brought to bear in decisive combat.¹³

4. Reserve: FM 71-101 stipulates that the air assault division can be used as a reserve for a corps or larger force. Combined arms organization is stressed for this type

mission. Doctrine indicates that the reserve will normally be organized with combinations of the following units:¹⁴

Air Assault Infantry Battalions

Attack Helicopter Battalion

Air Cavalry Squadron

Field Artillery Battalions

Aviation Group Battalions

5. Rear Area: The air assault division may often be located in the rear area of the corps. During these periods, the division can be used for rear area combat operations in coordination with the rear area operations center (RAOC) of the COSCOM. FM 71-101 lists the following roles in which the air assault division assists in the security of the corps rear area:¹⁵

a. Conducting surveillance of assigned areas of the corps rear area.

b. Providing forces to counter enemy airborne, airmobile or guerrilla operations.

c. Defending threatened fixed installations.

For rear area combat operations, the division is employed from dispersed assembly areas throughout the corps rear area. This allows the division to react quickly in response to enemy action against likely objective areas.¹⁶

6. Flank Security: FM 71-101 provides that the division can screen the flank of a corps or larger force which is conducting defensive operations. The key organizations used in the flank screen are the air cavalry squadron, the attack helicopter battalion and field artillery units. When the

screening force makes contact with the enemy, the division selects positions between the enemy and the flank of the corps. The air assault brigades are then positioned in depth along the enemy avenues of approach into the corps flank, thus delaying the enemy until the corps can deploy to counter the threat.¹⁷

7. Limited-Objective Operations: FM 71-101's discussion of this topic is provided, in full, below:

The division can conduct limited-objective attacks against enemy facilities and lines of communication. For example, it can be used to seize key terrain, bridges and mountain passes to facilitate offensive operations.¹⁸

8. Raids: The air assault division is extremely well suited for this type operation. Raids are conducted to accomplish some specific mission with no intention of holding terrain. Doctrine provides four possible purposes of the raid. They are to:¹⁹

- a. Harass, deceive, or disrupt the enemy; so that they cannot be employed in another area.
- b. Disrupt enemy command and control.
- c. Capture personnel or material.

Raids are conducted with rapid execution to gain surprise over the enemy force. The raiding force is then rapidly withdrawn to avoid decisive engagement with the enemy. FM 71-101 provides the following list of appropriate objectives for an air assault raiding force:²⁰

Command posts

Communications centers

Airfields/airfield facilities

Key enemy personnel

Supply installations

Conventional, nuclear and chemical weapons delivery
means and storage areas

Prisoner of war compounds

Targets of intelligence interest

9. Delay and Withdrawal: The air assault division delays through a combination of rapid movement and limited offensive maneuver. Delaying forces are organized around armor-defeating weapon systems. Limited offensive operations are conducted to disrupt and disorganize the enemy. The objective of these limited offensive operations is to cause the enemy to deploy from approach march formation to an attack formation. The air assault force can then delay using either alternate or successive positions.²¹

When withdrawing under pressure, the air assault division must make maximum use of attack helicopters, field artillery and close air support to complete the disengagement from the enemy force. If the division is not under enemy pressure during the withdrawal, air assault infantry battalions are extracted first, followed by armor-defeating weapon systems.²²

10. Cross FEBA Operations: FM 71-101's discussion of this topic is provided, in full, below:

The air assault division is ideally suited to conduct attacks to seize objectives across the FEBA as a means of transition to the offense and subsequent linkup.²³

Doctrinal Voids and Shortcomings

If the current doctrine for air assault operations is applied to the European environment (Chapter 4) and the Soviet threat (Chapters 5 and 6), some disturbing doctrinal voids and shortcomings appear. Each of these discrepancies is discussed below.

1. FM 71-101 does not address the employment of air assault forces in a chemical environment. Recent reports in the open press indicate that the Soviets, or their surrogates, may be routinely using chemical weapons in various low-intensity conflicts. This apparent willingness to use chemical weapon systems should not go unnoticed. It is well known that the Soviets consider chemical weapons to be an ideal means of inflicting heavy casualties in the modern battlefield environment.²⁴ The Soviets have made the political decisions to allow use of chemical weapons by their armed forces. Military doctrine has been developed by the Soviets which provides guidance to field commanders for the necessary decisions of when, where and how these weapons should be employed. We should consider chemical warfare as an option which is routinely available to the Soviet commander.²⁵

2. FM 71-101 does not address the employment of air assault forces in a tactical nuclear warfare environment. The Soviets have known capabilities to employ tactical nuclear weapons. Indeed, all of the conventional forces in Europe, NATO and Warsaw Pact, either have such weapons themselves or have access to use of such weapons. Soviet doctrine clearly establishes guidelines, priorities and objectives of tactical

nuclear operations. The addition of such weapons to the battlefield provides awesome differences in destructive fires available to the competing forces. What would be the role of the air assault division in such an environment?²⁶

3. FM 71-101 states repeatedly that the air assault division is best utilized in restrictive terrain when opposing an enemy mechanized/armor threat. The most common restrictive terrain in Europe will be the large urban areas discussed in Chapter 4. Current air assault doctrine does not address specifics or operational considerations for the conduct of air assault operations in urban terrain. Is the division required to sacrifice its inherent mobility to participate in urban operations or can that mobility be used to its advantage in the urban environment?

4. Rear area operations are discussed only superficially by FM 71-101. It is likely, however, that if an air assault division is assigned to a heavy corps which faces an armor threat, that air assault division may habitually be located in the corps rear area. How does the air assault division fight in the rear area?

5. The helicopter provides the unique character to the air assault division. FM 71-101 does not adequately address possible doctrinal implications of limited visibility or limited ceiling conditions on employment of the division. We know from Chapter 3 that such conditions are common in Europe. We also know that the Soviets have developed attack helicopters with a potential air to air combat capability.

What are the doctrinal implications for the air assault division?

6. FM 71-101 discusses air assault aspects of delay and withdrawal operations only superficially. With the Soviet numerical superiority in men and equipment it is likely that US forces will initially delay in some areas so that heavy forces may be concentrated in others. What role can the air assault division play as part of a heavy corps conducting a delay or a withdrawal across a river obstacle?

Discussion

Each of the potential doctrinal voids or shortcomings will be addressed below. These discussions are not meant to provide or suggest an alternative doctrine for air assault operations. The purpose of this discussion is simply to reflect upon areas of concern regarding current doctrine as it applies to the European environment.

1. The Chemical Environment - The Soviets will employ chemical weapons in order to maintain the momentum of their offensive. Airborne or combined arms forces will be employed to exploit the effects of chemical attacks. How are air assault forces employed in a chemical warfare environment?

The light infantry forces of the air assault division are vulnerable to enemy chemical operations. The only protection available to air assault forces is found in their protective clothing and whatever shelter may be available on the battlefield. Helicopter laager areas and pickup zones are potential chemical targets. Chemical decontamination of

large numbers of helicopters is a significant problem which has not yet been solved.

The inherent mobility of air assault forces does, however, provide some capability for operations in a chemical environment. Air assault forces can be dispersed widely to avoid providing lucrative targets for chemical exploitation. The inherent mobility of these forces allows rapid concentration where necessary to engage the enemy. The air cavalry squadron can conduct rapid reconnaissance of large areas to determine extent and type of contamination. The air cavalry can also maintain surveillance of contaminated areas to provide warning of enemy attempts to cross these areas with exploitation forces. Air assault forces can easily bypass contaminated areas. Helicopters can also move forces to terrain which dominates contaminated areas, thus avoiding occupation of those areas.

If operations must be carried out in contaminated areas, heliborne forces can be inserted in the area just prior to their use and extracted as soon as practicable. This will aid in minimizing exposure time to lethal or incapacitating agents. Air assault forces can be quickly shuttled to decontamination stations and returned to battle.

The introduction of chemical weapons on the battlefield will represent a significant threat to US forces. We must be prepared for the Soviets' utilization of these systems. Our tactical doctrine should surely address the employment of our forces in this type environment.

2. The Nuclear Environment - Tactical nuclear weapons provide the Soviets with another means of maintaining the momentum of their offensive. Current doctrine for air assault forces ignores this aspect of Soviet operations.

Air assault forces are not afforded the protection which is readily available to their mechanized and armored counterparts. Air assault infantry and aviation units are extremely vulnerable to enemy nuclear operations. Individual protection is found only through issued protective clothing/equipment and whatever shelter the battlefield provides. Helicopter airframes are especially vulnerable to the dynamic overpressures associated with nuclear detonations. Air assault forces are potential nuclear targets when they are employed as a corps or larger unit reserve. These forces are so relatively fragile, however, that their proximity to other priority targets (i.e. nuclear capable artillery units) could result in extensive losses in air assault units if these other priority targets are struck.

In a nuclear environment, air assault forces should be dispersed as much as the operational situation will allow. Each dispersed element should have combined arms capabilities and be relatively self-sustaining. This would allow each element to conduct combat operations independently, if necessary, and also would allow the overall mission to be continued if a single element were eliminated.

The air cavalry squadron can conduct radiological surveys following a nuclear strike and can determine extent of damage and contamination. Operations in and around a

nuclear contaminated area would be similar to operations in an area contaminated by chemicals.

The destructive power of nuclear weapons will drastically influence the outcome of any conflict in which they are used. Air assault forces are extremely vulnerable to the destructive power of these weapon systems. However, the high mobility and quick reaction of air assault units may be valuable assets for use in this type environment. In any case, we must be ready to react when the situation arises. Our tactical doctrine should address the employment of air assault forces in a nuclear environment.

3. Urban Operations - FM 71-101 explains the "why" of urban operations for air assault forces. The restrictive terrain found in large urban areas is well suited to light infantry operations. Urban areas offer the infantry the opportunity to use all of their capabilities while minimizing their vulnerability to modern weapon systems. However, FM 71-101 fails to address the "how" of urban operations for air assault forces.

The air assault commander must use his force to its best advantage. That force has to be able to conduct normal light infantry operations in an urban environment, but should it be limited to that role? Does mobility have to be entirely sacrificed in order to take advantage of the restrictive terrain of urban areas?

Urban combat conducted by typical infantry forces is characterized by tough, street to street, house to house maneuver. The same situation will exist for air assault

infantry, but additional capabilities are available to the commander of an air assault force. Air assault forces can easily bypass areas of extremely stiff resistance. Air assault forces can be landed to the rear of enemy defenders, thereby causing them to assume an all around defense. Air assault elements can be inserted on top of buildings within the urban area. In this way, "key terrain" can be taken quickly, allowing enemy defenses to be breeched. Isolated air assault elements can be resupplied, or if necessary extracted. There appear to be many possibilities which can be addressed.

There are also negative aspects of employing heliborne forces in an urban environment. Most notable, the mobility differential which is inherent to air assault operations is reduced somewhat. Urban areas do not abound with suitable areas for helicopter pick-up zones or landing zones. Helicopter operations will most likely be centered around small infantry elements. The capabilities of air cavalry to conduct reconnaissance in urban areas is extremely limited. The effectiveness of attack helicopter units in urban terrain is an unknown factor, however, it would seem that they could be best used elsewhere. Helicopters operating in built up areas are also extremely vulnerable to enemy small arms fire. These negative aspects have to be carefully considered when employing air assault units in urban terrain.

We know that the likelihood of conducting combat operations in an urban environment is high. Our current doctrine stresses that this environment is a place where the

air assault division should be employed to take advantage of the area's restrictive features. Our current doctrine falls short, however, of addressing how the air assault division should be employed in this environment.

4. Rear Area Operations - FM 71-101 does provide some guidance on rear area operations. This guidance provides a good starting point, but does not address the topic in much detail. A review of Chapter 6 will show that the Soviet forces have the capability of inserting large numbers of airborne or air assault forces deep into our rear areas. These deep thrusts are meant to aid in continuing the momentum of the attack. In terrain which favors armor or mechanized operations, the air assault division will most likely be located in the corps rear area. From that location the division may conduct rear area combat operations or act as corps reserve. Perhaps the division will have responsibility for both operations simultaneously. There are significant advantages to employing the air assault division in a rear area role. The threat forces that will be encountered will mostly be light infantry, airborne or guerrilla elements; ideal opponents for air assault forces. The terrain belongs to friendly forces, the enemy air defense capability will be limited. The air assault division can react quickly over great distances to counter penetrations of the rear area.

Soviet doctrine emphasizes aggressive action in enemy rear areas. They have the capability to penetrate our rear areas from the air or on the ground. Significant enemy activity in a corps rear could cause the cohesion of the

entire organization to collapse. It has been well published that the army is revising its doctrine and organizational structures to address rear area combat operations. Since the air assault division is likely to be employed in that role, it would seem to be imperative that air assault doctrine encompass the most current concepts being developed for rear area combat operations.

5. Limited Visibility/Limited Ceiling Conditions - An analysis of Chapter 4 will reveal that limited visibility and limited ceiling conditions will be encountered frequently on the European battlefield. These conditions will affect all forces on the battlefield, but they are of special significance to air assault forces.

Limited visibility may be caused by the weather or the terrain. In either case, it means that air assault forces will not be able to engage enemy mechanized/armor forces at maximum ranges. Air assault forces need time to break contact with advancing mechanized/armor forces so that they can be displaced to new fighting positions by helicopter. If they cannot inflict casualties on the advancing enemy and begin disengagement by the time the enemy force is within 1500m of their position, helicopter extraction may become extremely difficult. If the air assault force cannot be extracted, it may be destroyed by the heavier mechanized/armor enemy force.

Low ceiling conditions also affect the combat operations of the opposing forces. Under clear sky conditions

we can conduct air assault operations easily, however, the heliborne force is vulnerable to attack by enemy high performance aircraft. Our doctrine, therefore, points to the advantages of conducting air assault operations during periods of limited visibility/ceiling to achieve surprise and avoid this vulnerability. High performance aircraft are not usually expected to be encountered during low visibility/ceiling conditions. This is the realm of the helicopter. We now face the problem of conducting operations in this environment and still being vulnerable to an air-to-air threat. The Soviet Hind-D helicopter is known to have an air-to-air potential. We have no similar capability for treetop engagement of other helicopters. At the present time, air assault force aircraft would probably attempt to engage other helicopters with whatever weapon systems were available. The reliability of such engagement is probably not sufficient, however, to have continuing success against true air-to-air systems.

Air assault doctrine needs to be fully developed to address both situations. Air assault forces must be able to continue to operate effectively in low visibility/ceiling conditions.

6. Withdrawal - FM 71-101 does explain how the air assault division conducts a withdrawal. Perhaps current doctrine should be expanded somewhat to address a situation which will be common on the European battlefield.

The Soviets emphasize momentum of offensive operations. For this reason, the numerous rivers encountered in Germany

initially may have caused them some concern. Over the years, however, the Soviets have developed a significant bridging capability, as well as a significant amphibious and fording capability. Soviet equipment is specifically designed to overcome water obstacles. Heliborne forces are often identified to seize crossing sites over major obstacles. If a heavy corps is conducting a delay past a river obstacle, could the air assault division play a significant role in the operation? Normally, the corps would leave heavy forces in contact so that the corps main body could establish a defense on the far bank of the river. As the enemy approached the river, the forces left in contact would have to disengage early so that they could get across the river prior to being overwhelmed. Some crossing sites would have to be left open until these forces were safely withdrawn.

An air assault division could possibly play a meaningful role in such an operation. Initially, the air assault division, located in the corps rear, could prepare extensive defensive positions in depth on suitable terrain on the side of the river towards the enemy. Defensive plans could be developed and supporting fires coordinated. When the corps main body delays through the air assault division, it immediately moves to the far bank, establishes a defense and destroys all crossing sites. The air assault division then delays the enemy's advance within its capabilities and prepares to withdraw across the river. Since the corps main body displaced early, the majority of the corps artillery, the forward division's artillery and the corps' attack

helicopter assets should be available, along with close air support, to assist the air assault division in disengaging and withdrawing across the obstacle.

Admittedly, it is not quite that simple. But there may be a capability available which has not been actively pursued in the past. If we can deny the Soviets a hasty crossing, we can slow his momentum. Our doctrine should make use of our capabilities to the fullest.

Summary

Current doctrine provides the basic guidance for conducting air assault operations in the European environment. There are, however, some significant doctrinal voids and shortcomings which should be addressed if we are to successfully employ the air assault division on the modern mechanized battlefield.

Notes

1 Field Manual 71-101 (Draft), Infantry, Airborne and Air Assault Division Operations, Department of the Army, Washington, D.C., 5 December 1979, p. 8-3.

2 Ibid., p. 8-7.

3 Ibid., p. 8-8.

4 Ibid., p. 8-8.

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CHAPTER 8

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

If war ever comes to Western Europe, it is reasonable to assume that the air assault division may be deployed to the area of conflict to take part in military operations alongside its mechanized and armored counterparts. The purpose of this study has been to determine how the air assault division can best be employed on that European battlefield.

The air assault division's organization, capabilities and limitations were compared with the Soviet threat and the European environment. Soviet air assault operations were discussed to identify trends which might affect US air assault operations. Current air assault doctrine, as provided by FM 71-101, was reviewed and compared to the Soviet threat and the European environment. Possible voids and shortcomings were identified in current air assault doctrine. These discrepancies were then discussed with regard to European applications.

Conclusions

1. The role of the air assault division on the European battlefield should be generally, as described in FM 71-101, Infantry, Airborne and Air Assault Division Operations.

2. If the current doctrine for air assault operations (FM 71-101) is specifically applied to the European environment and the Soviet threat, some disturbing doctrinal voids and shortcomings appear. These discrepancies are reflected in the topical areas listed below:

- A. Chemical Warfare
- B. Tactical Nuclear Warfare
- C. Operations in Urban Terrain
- D. Rear Area Combat Operations
- E. Limited Visibility/Ceiling Operations
- F. Withdrawal Operations

Recommendations

1. That current doctrine for air assault operations be reevaluated by the proponent with a view towards addressing the employment of the division in a sophisticated conventional or nuclear environment.
2. That upon completion of the reevaluation, FM 71-101, Infantry, Airborne and Air Assault Division Operations, be updated accordingly.

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